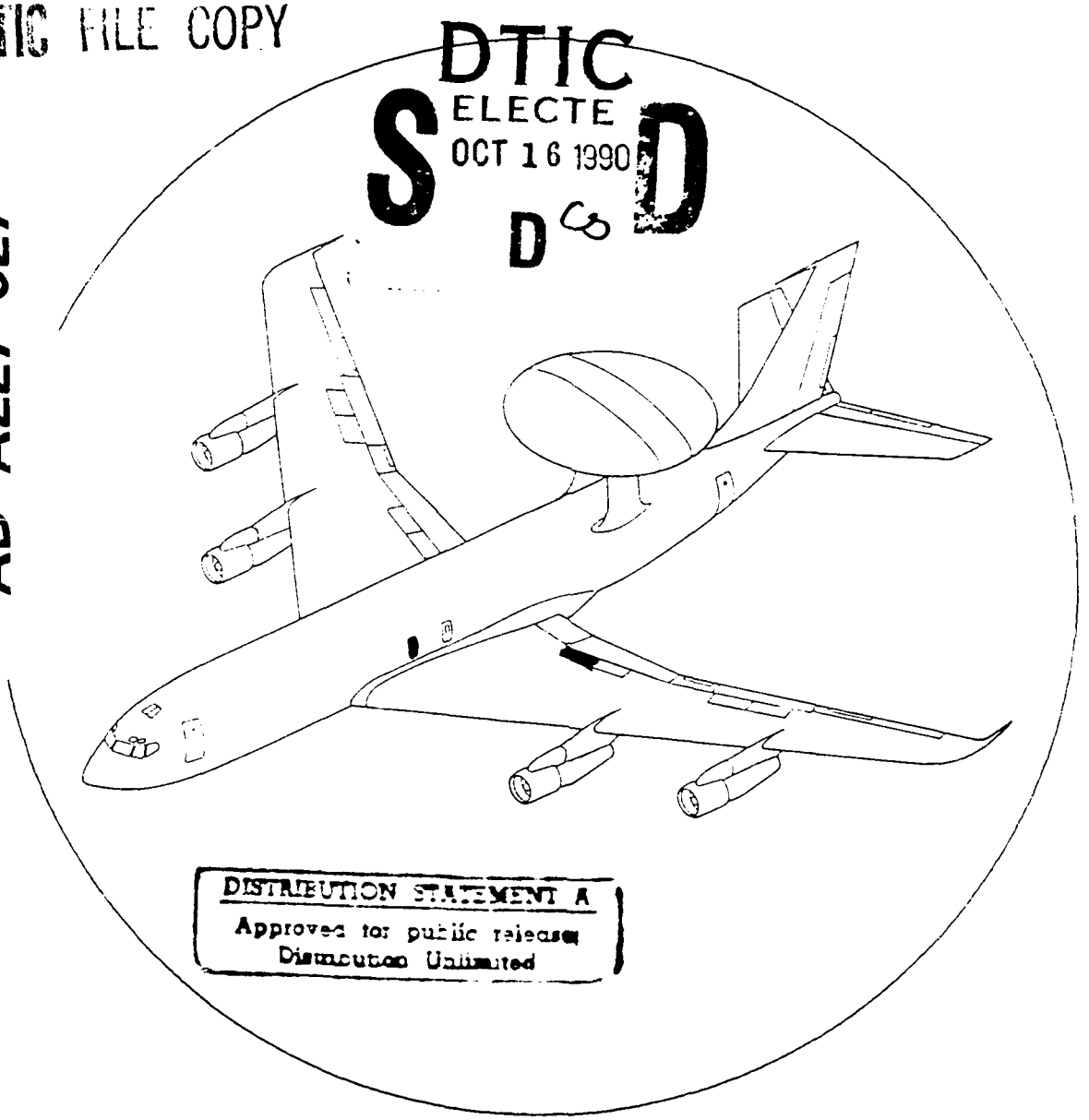
E-3 AWACS
CORROSION PREVENTION ADVISORY BOARD
(CPAB)



12 JULY 1990
TINKER AFB, OK

E-3 CPAB ATTENDEES - 12 JULY 1990:

[XXX] - Indicates Defense Switching Network (DSN) prefix

TSgt Robin Tigler	552 AWACW/MAEMBS	(405) 734[884]-5234
MSgt Ray Albright	552 AWACW/MAQY	(405) 734[884]-2683
Richard Elmslie	BOEING, Customer Tech Support	(206) 655-3329
Dave Van Horn	BOEING, Customer Tech Support	(206) 655-3329
Nona Larson	BOEING, Materials & Processes	(206) 773-5388
MSgt John Wohlford	Det 1, TAWC, Boeing	(206) 655-5380
MSgt Glenn A. Graham	HQ TAC/LGMC	[574]-7571
HFw Franz-Josef Deckers	NAEWF/E-3A Component/LWMQ	01-49-2451-63-6215
Lt Col Erwin Langlotz	NAEWF/E-3A Component/LWMC	01-49-2451-63-401
Art Zielke	NAEWFC/FCL-TCD	01-32-6544-4694
SMSgt Joachim Hoerger	NAEWFC/FCLC	01-32-6544-5310
Capt Wilfried Kessel	NAEWFC/FCLE	01-32-6544 4647
SMSgt Bob Striegel	NAEWFC/FLCE	01-32-6544-5392
Tom Noble	OC-ALC/MABECE	(405) 736[336]-7774
Robin Lee Stearns	OC-ALC/MAQCP	(405) 736[336]-5019
Tom Walker	OC-ALC/MAQCP	(405) 736[336]-5019
Warren Gardner	OC-ALC/MMEOM	(405) 736[336]-5008
Louise Nguyen	OC-ALC/MMEOM	(405) 736[336]-5008
Don Johnson	OC-ALC/MMEOS	(405) 736[336]-5004
Wg Cdr Alan Shaw	OC-ALC/MMKI - UK Liaison	(405) 736[336]-5170
Lola Gentry	OC-ALC/MMKIT	(405) 736[336]-5329
Vincent Foster	OC-ALC/MMKRA	(405) 736[336]-3660
Tracy Ireland	OC-ALC/MMKRA	(405) 736[336]-5753
2Lt Jim Kihle	OC-ALC/MMKRA	(405) 736[336]-3343
Jon Kimmel	OC-ALC/MMKRA	(405) 736[336]-3343
Hoang Nguyen	OC-ALC/MMKRA	(405) 736[336]-3660
Lt Janet Wyland	OC-ALC/MMKRA	(405) 736[336]-5134
Wilburn Mitchell	OC-ALC/MMKRTA	(405) 736[336]-5741
Maj David Genovese	OC-ALC/MMSRE	(405) 736[336]-3827
Lt Thomas Ramsey	OC-ALC/MMSRE	(405) 736[336]-3827

STATEMENT "A" per Vince Foster
Oklahoma City Air Logistics Center/LAKRA
Tinker AFB, OK 73145
TELECON 10/12/90 VG

E-3 CORROSION PREVENTION ADVISORY BOARD MINUTES
12 JULY 1990

1. The second 1990 CPAB was held on 12 July 1990 at the ALC conference room, Building 3001, Tinker AFB OK. The meeting convened at 08:30 by the Chair, Mr. Vince Foster, with opening remarks given by Col. Michael King, E-3 System Program Managment Chief. Attendees introduced themselves, then the meeting agenda was presented. The Chair noted that handouts of the administrative items were available to aid the attendees during the day. An attendees list is included with these proceedings. The Chair also stated that the E-3 Product Improvement Working Group (PIWG), which is held the same week as the E-3 CPAB, would possibly be changing the meeting interval to every six months after the November meeting. As a convenience to foreign nationals attending PIWG, we will consider changing CPAB meeting intervals to coincide with the PIWG change, provided a majority of members and the chair agree in accordance with the CPAB Charter.

2. The E-3 CPAB Charter was presented for review. The noted changes requested are incorporated in the Charter included with these proceedings.

3. The distribution list was reviewed. Changes were noted and is included in a more detailed distribution list included with these proceedings.

4. A listing of corrosion conferences scheduled for the next 18 months was presented for review. The attendees were asked to provide information to the CPAB Chair of meetings/conferences not listed. Attendees were encouraged to contact the CPAB Chair if they were interested in any of the list conferences.

5. A presentation was given by Mr. Don Johnson, OC-ALC/MMEOS, on the Carbon Dioxide CO_2 Paint Removal Process. A hard copy of the briefing is included with these proceedings. Nona Larson, Boeing, discussed several drawbacks regarding Boeing testing on the CO_2 process. Excerpts from the report as well as fatigue testing will be provided as soon as possible. Ms. Larson also noted a new process based on wheat starch.

6. Introductions, left out at the beginning of the meeting, were given.

7. A presentation was given by Mr. Warren Gardner, OC-ALC/MMEOM, on the current state of environmental regulations regarding Volatile Organic Compounds (VOCs) and efforts in DoD to change paint/primer materials for compliance. A hard copy of the briefing is included with these proceedings. It was noted that the proposed MIL SPEC for KOROFLEX type primer was abandoned and that a draft Federal Specification, TT-P-2760, has replaced it. It is unknown if or when the Fed Spec will become effective.

8. Action items were reviewed. Detailed Action Item Tracking Forms, both recurring and new, are presented in these proceeding. A detailed summary of Action Item tasks, and responsible OPR's and organizations are also presented in these proceedings.

9. The CPAB took a break at 10:12 and reconvened at 10:40. Action Item updates continued.

10. Action Item 88-26: Nona Larson, Boeing, requested OC-ALC/MMKRA provide Material Safety Data Sheets (MSDS) to her. MMKRA agreed to send them as soon as possible.

11. The CPAB adjourned for lunch at 11:00 and resumed Action Item review at 13:20. Action Item updates continued.

12. Action Item 89-06: Action Item closed.

13. Mr. Richard Elmslie, Boeing, presented corrosion related Engineering Services Task updates. EST 90-E3B2-13, Development of Tools/Procedures to Prevent Corrosion in the Wing Tip HF Antenna, was started only 2-3 weeks previously. EST 89-E3B3-16, NDI Methods to Locate Intergranular Corrosion Around Fastener Holes in Aluminum Wing Skins, was delayed by Navy E-6 problems and will not be completed until Dec 90. EST 89-E3B2-45, Review and Establishment of Revised Allowable Damage on Leading Edge Outboard Slat Carriage Attach Fittings, was being reviewed by Boeing stress. Preliminary analysis is showing no allowance for cracks.

14. Capt. Wilfried Kessel, NAEWFC/FCLE, presented a briefing on the NATO Corrosion Prevention and Control Program. The briefing charts are included in the proceedings.

15. Action Item updates continued.

16. Action Item 89-16: Action Item closed. OC-ALC/MMKRA took side action to obtain status of TACAN that was put through the LIXTON process at the Oklahoma City FAA depot.

17. The CPAB took a break at 14:55 and reconvened at 15:05.

18. Lt. Col. Langlotz, NAEWF/E-3A Component, attended the National Association of Corrosion Engineers (NACE) Corrosion/90 conference in Las Vegas, Nevada, and briefed the attendees on conference issues. There were approximately 5,000 participants and 200 exhibitors from all over the world. It was noted that the heart of corrosion control was having a good inspection system, a good reporting system, and a good prevention program. The T9 military aircraft group was looking at electronic corrosion issues and someone to chair that group. Lt. Col. Langlotz emphasized the wealth of information and contacts that are formed by attending this conference. He also noted a lack of OC-ALC participation and hoped that participation wouldn't be lacking next time.

19. Action Item updates continued.

20. Action Item 90-01: It was additonally noted that Anne Copeland, OC-ALC/MAQVA, had a considerable amount of information regarding excellent replacements for MEK.

21. Only one new item was presented. 552 AWACW/MAQ requested an evaluation of "bird bath" taxi-way washes. OC-ALC/MMKRA took action to review present applications. Lt. Col. Langlotz recommended dehumidification as opposed to water washing, especially high pressure washing. This item is presented in detail as Action Item Number 90-02.

22. No further new items were presented NAEWF, 552 AWACW, OC-ALC/MMKRA, or other CPAB attendees.

23. CPAB meeting was adjourned at approximately 16:15.

Action Item	CPAB Action Item Task	OPR	Point(s) of Contact
87-35	OC-ALC/MMKRA will further investigate wash procedures with 552 AWACW.	OC-ALC/MMKRA	V. Foster
	Test non-cleaning of various areas to determine effects on corrosion and appearance.	NAEWF E-3A Comp.	F. Deckers/R. Parent
	Continue developing local corrosion work deck, provide draft copy to OC-ALC/MMKRA for review and coordination, and present to DCM, HQ TAC, etc. for approval.	552 EMS/MAEMBS	R. Farnsworth
	Coordinate testing of detergent sample provided by NAEWF E-3A Component with WRDC/MLSA or OC-ALC/MMEOM/MAQC.	OC-ALC/MMKRA	V. Foster
88-01	Investigate test of LE tape by applying to aircraft to determine validity of applicaton procedures and adhesion properties. Once verified, include in Tech Orders.	OC-ALC/MMKRA	V. Foster/C. Nowlin
88-10	Review final report of EST 89-E3B2-15 and prepare cost analysis to determine whether change to aluminum will be economically advantageous versus continuing rework of magnesium. Investigate new magnesium alloy, AZ91E at potential candidate for AZ91C replacement vs. aluminum.	OC-ALC/MMKRA	J. Kihle
88-12	Prepare TCTO for publication to inspect/remove corrosion in the emergency exit light housing.	OC-ALC/MMKRA, OC-ALC/MMKRTA	C. Nowlin/W. Mitchell
88-13	Prepare TCTO to inspect rudder control rods for corrosion, and drill hole for drainage. MMKRA will request all users inspect attachment hardware for corrosion, loose or missing fasteners.	OC-ALC/MMKRA, OC-ALC/MMKRTA	V. Foster/W. Mitchell
	Investigate/report instances of corrosion discovered in rod.	552 AWACW/MAQY	R. Albright
88-16	Prepare ECO annotating additional drain hole, and prepare TCTO to drill drain hole and add leveling compound. Change inspection interval and ensure inspection/reapplication of CPC is included.	OC-ALC/MMKRA, OC-ALC/MMKRA	J. Kihle/W. Mitchell
	Report status of EST 90-E3B2-13 for procedures/tooling to remove water in foam and inject grease into foam cells to displace water.	BOEING	D. Van Horn
88-18	Report results regarding application of MASTINOX to landing gear bolts.	NAEWF E-3A Comp.	F. Deckers
88-25	Develop ACI procedures to inspect/apply CPC, add leveling compound.	OC-ALC/MMKR, OC-ALC/MMKRTA	C. Nowlin/W. Mitchell

Action Item	CPAB Action Item Task	OPR	Point(s) of Contact
88-26	Develop Statement of Work requiring conductivity checks and material changes on problem cabinet bonding pads. Task will be in conjunction with ESM modification or HAVE QUICK A-NET.	OC-ALC/MMKRA	V. Foster
	Investigate reported problem of other cabinet mounting bolts corroding, and provide solution.	OC-ALC/MMKRA	V. Foster
	Investigate whether corrosion is a problem on cabinets on TS-3.	BOEING	D. Van Horn
88-28	Coordinate a test of Aerogloss on a newly painted E-3 aircraft. Provide a Statement of Work to OC-ALC/MMKP detailing which aircraft and application procedures.	OC-ALC/MMKRA	J. Kihle
	Coordinate a demonstration of Aerogloss application for personnel from OC-ALC/MAQCP/MABPCB/MABEP, 552 AWACW/MAQ, and 552 EMS/MAEMBC. Demonstration will be done by Evergreen Aviation at Tinker AFB.	OC-ALC/MMKRA	J. Kihle
	OC-ALC/MMKRA will send a copy of MSDS to Nona Larson, Boeing.	OC-ALC/MMKRA	J. Kihle
88-29	Inspect aircraft with Cad plated stainless steel fillers and provide results of their condition to OC-ALC/MMKRA.	552 AWACW/MAQ	R. Albright
	OC-ALC/MMKRA will investigate changing tin plating via TCTO vs attrition.	OC-ALC/MMKRA	H. Nguyen
88-30	Complete the addition of rework procedures to Tech Order. Change IPB to indicate local manufacture of replacement, and add inspection requirements to -6 as applicable.	OC-ALC/MMKRA	H. Nguyen
88-31	Report condition of teflon coating applied after application of LIXTON chemicals.	NAEWF E-3A Comp.	F. Deckers/R. Parent
	Perform normal prepaint preparation of surface and apply teflon coating. Report condition of coating to CPAB.	NAEWF E-3A Comp.	F. Deckers/R. Parent
	Once above tests are completed by E-3A Component, procedures for application of teflon coating will be included in T.O. 1E-3A-23, Figure 2-5.	OC-ALC/MMKRA	V. Foster
88-32	Prepare Statement of Work for a Boeing EST to study all areas requiring chafing protection, change T.O. -23 to ensure all areas are called out, and that procedures for application are available in T.O. -3-1 and/or T.O. -23.	OC-ALC/MMKRA, BOEING	V. Foster/D. Van Horn
	Prepare requirements for inspection of teflon coating and application of coating as required. Task to be done upon completion of above task for EST.	OC-ALC/MMKRA	V. Foster

Action Item	CPAB Action Item Task	OPR	Point(s) of Contact
89-04	Perform tests of MASTINOX sample provided to determine effectivity as an anti-seize/CPC. Test will also be conducted verifying claims by manufacturer that compound is equivalent to MIL-P-8116B, and does not contain asbestos.	OC-ALC/MMEOM, OC-ALC/MMKRA	D. Tanner/V. Foster
	Query WRDC/MLSA for further information regarding MASTINOX vs MIL-P-8116.	OC-ALC/MMKRA	V. Foster
89-05	Continue investigating bleed air duct corrosion and the appropriate avenue for rework if necessary.	OC-ALC/MMKRA	J. Kihle
89-07	Change Tech Order(s) to specify painting leading edges and applying leading edge tape to VHF antennas.	OC-ALC/MMKRA, OC-ALC/MMKRTA	V. Foster/W. Mitchell
89-09	Submit ECO to document drain hole and coordinate TCTO for drain hole installation with OC-ALC/MMKRTA.	OC-ALC/MMKRA, OC-ALC/MMKRTA	J. Kihle/W. Mitchell
	MMKRA/552 AWACW will further inspect USAF aircraft.	OC-ALC/MMKRA	J. Kihle
89-11	Submit ECO to document drain hole in lower cover assembly, and coordinate TCTO with OC-ALC/MMKRTA to install drain hole.	OC-ALC/MMKRA OC-ALC/MMKRTA	J. Kihle/W. Mitchell
89-12	Coordinate TCTO with OC-ALC/MMKRTA to install drain holes.	OC-ALC/MMKRA, OC-ALC/MMKRTA	J. Kihle/W. Mitchell
89-13	Incorporate inspection into T.O. -6 and/or ACI/PDM as applicable, decreasing inspection interval if necessary. Investigate inspection/repair procedures and add to T.O. -23, -3-1 as applicable. Also, investigate addition of drain hole in lower gap panel.	OC-ALC/MMKRA	J. Kihle
	Investigate -6 inspection results of this area and report to CPAB.	552 AWACW/MAQY	R. Albright
89-14	Report status of investigation to replace grease with a dry film lubricant.	OC-ALC/MMKRA	J. Kimmel
89-15	Investigate use of conductive sealant. Change T.O. -23, -3-1 to incorporate use of conductive sealant in all areas requiring conductive path due to HCI requirements.	OC-ALC/MMKRA	J. Kihle
	Provide sample to NAEWF E-3A Component for testing on NATO E-3A. Coordinate test with NAEWFC/FCLE.	OC-ALC/MMKRA	J. Kihle
89-18	Review T.O. -6, -23, and ACI/PDM Work Specs to ensure complete instructions are included for corrosion inspections and CPC application. Ensure that requirements in -6 and ACI/PDM specify corrosion inspection guidelines and CPC application instructions per T.O. -23. Include changes to -6, -23, and ACI/PDM to ensure complete tech data.	All Users	V. Foster
89-19	Provide test results of supplied Sikkens wash primer, Desoto Koroflex primer, and Sikkens paint/primer.	WRDC/MLSA	S. Childers/F. Meyer
90-01	Investigate use of enzyme cleaners as replacement for MEK and use as an Alodine replacement.	OC-ALC/MMKRA	J. Kihle
90-02	Investigate use of taxi-way "bird bath" rinse facilities.	OC-ALC/MMKRA	H. Nguyen

E-3 CPAB ISSUES

1. Two environmental issues in particular are affecting all USAF weapons systems and is being felt by FMS weapons systems as well (particularly in Germany). These are Volatile Organic Compounds (VOCs), and Non-Chemical Paint Removal. A short explanation of these issues is given below, with appreciation to OC-ALC/MMEOM for most of the explanations.

2. VOCs:

Organic solvents (sometimes water) comprise the portion of a liquid coating which evaporates into air as the coating dries to a solid film. VOC is a term used to describe the volatile organic solvents which are an essential element in most coating materials. VOCs are photochemically reactive in the atmosphere, reacting with nitrogen oxides in the air to create ozone, which plays a significant role in a number of air pollution problems as well as damaging the naturally protective ozone layer surrounding the Earth.

In order to reduce emissions of air polluting elements from coating materials, the EPA and individual states and localities have passed legislation which specifically limits the amount of VOCs than can be used in coatings. The South Coast Air Quality Management District (SCAQMD) at El Monte, California, adopted Rule 1124, for Aerospace Assembly and Component Manufacturing Operations. This rule limits the amount of VOCs allowed in coatings and is being complied with throughout the U.S. aircraft industry. The Air Force complies with Rule 1124, which allows 350 grams/liter of solvent for primer and 420 grams/liter of solvent for topcoat. The painter shall not add any type of solvent which contains VOC in excess of the stated limits.

There are two preferred methods used by coatings manufacturers to develop coatings with lower VOC levels. One is to increase the solids content of coating materials while reducing solvent levels (high solid topcoats). The other is to develop water-based coatings (water-borne primer) which have very low solvent level and utilize different resins than those traditionally used in solvent based systems. At this time, two companies manufacture compliant coatings for Air Force use, and new advances in equipment technology are contributing to lower VOC emissions.

3. Non-Chemical Paint Removal:

As with VOCs, paint strippers are extremely harmful to the environment and also present a significant danger to life, and legislation is mandating elimination of their use. Aircraft maintainers have two options to comply with chemical restrictions: 1) Stop stripping/painting aircraft and 2) Develop alternative methods of paint removal. For esthetic purposes as well as corrosion control, it is virtually impossible to not strip and paint aircraft on a recurring basis. The only option left is to find stripping alternatives.

Several methods of non-chemical paint removal are being studied. The two most promising at this time are Plastic Media Blast (PMB) and Carbon Dioxide (CO_2) Blasting. Other methods are also being investigated, such as laser stripping, bicarbonate of soda stripping (BOSS), and using wheat chaff as a blast media. The primary concerns are: 1) Damage done to the structure, particularly thin materials, 2) Damage accountability in the Aircraft Structural Integrity Program (ASIP), 3) Strip rates (is it economical?), 4) Media egress into aircraft cavities, and 5) Need for special facilities/equipment.

The March 1990 and July 1990 E-3 CPAB Proceedings present briefings given on the two most promising non-chemical paint removal processes being studied.

4. The following fifteen pages, beginning with "The CPAB at Work", presents useful information regarding the above subjects. These pages were taken from the April 1990 F-4 CPAB Proceedings, with gracious approval by Mr. Leon Jaeger, OO-ALC/MMSRA, Hill AFB, UTAH.

THE CPAB AT WORK

PROBLEMS WITH WATERBORNE PRIMERS, MIL-P-85582

COMPARISON OF PLASTIC BLAST MATERIALS, MIL-P-85891
(DUPONT LEASE AGREEMENT)

USE OF HIGH SOLIDS POLYURETHANE TOPCOAT, MIL-C-85285

QUALIFICATION OF MATERIALS

STOCK LISTING OF MATERIALS

25 HOUR INSPECTION

THE CPAB AT WORK:

PROBLEMS WITH WATERBORNE PRIMER, MIL-P-85582 - Charles Pavlik

NOTE: We are in the process of converting to the waterborne primer at this depot in order to cut down on the volatile organic compounds (VOC) being emitted into the atmosphere and to become EPA compliant in this area. We did experience some problems with our first shipment of material while we were getting familiar with the product prior to applying to an aircraft. This material come from the Crown Metro Corporation because they was the lowest bidder on the contract. We decided to get material from the other two qualified manufacturers and test all three side by side. The report you are about to receive is from preliminary results. We were not completely satisfied with what we found and we are going to repeat our testing. The final report of our testing will be included in one of the follow-ups to these minutes.

We feel like we are a little premature by just a few days in being able to address this problem. The solutions may not be present, but we can certainly address the problem. We can address the reason why the problems are here. We can address what we are looking at to come up with a solution to these things. The handout, Attachment 1, will follow the view graphs, Attachment 2.

We ought to discuss the reason for this thought. California has levied the requirements whereby the Sacramento ALC is having to use a low VOC primer. In addition to that, Sacramento County Clean Air Act also requires them to use a high volume, low pressure application system which has a maximum of about 10 psi at the nozzle. Sacramento has had some problems with material they are currently working with. Right now, there are three manufactured products that qualify and are on the QPL. The military spec with which we are working is MIL-P-85582A. Deft, DeSoto and Crown Metro are currently on the Qualified Products List. Several buys have been made by GSA in the last year. Crown Metro turned out to be the low bidder. So that is what GSA has in their stock. Sacramento has been working with this Crown Metro low VOC product for the last several months. They have encountered some problems where they feel there is a variety of viscosity readouts they are getting with the materials from the sme batch. They feel this is giving them problems with the application of the material to the aircraft. Leon had heard about this problem a while back. He asked us if we would take a look at the mixing and application of the Crown Metro material which we had received for our supply. We don't have any of the Deft or DeSoto other than just sample amounts we have

tried and weren't impressed to use. We have not used the Crown Metro product in production in our maintenance organization. However, we are taking a look at the material on small plates and on small experimental parts.

At the time that we were asked to take a look at this Crown Metro material, we also brought in DeSoto and Deft material. for evaluation prior to production work. At the time, we decided we would use three inch by six inch aluminum plates per the -85582 specification. We thought we would do several things at the same time to determine how the material worked with new shop equipment for application to these plates. We take these plates to the laboratory and run the quality assurance tests as called out by the specifications. About the 20th of March, we took these materials to the shop and our production people work with them in the small parts area. We only had one day to apply our primers and to work with these products. The DeSoto material went on and looked good with the HVLPat about 8 - 10 psi. It also worked with the conventional air gun at 65 psi. Specification - 85582 does not specify what method of application to use. One thing we have found in our work with the HVLP system is that with the lower pressure, you have a lower break up of the materials when it is atomized. With the waterborne primer, problems we do have is homogeneity and coming up with the proper viscosity of the material. Each one of these manufacturers have a different compound or a different mix they have developed in which they have qualified. The instructions for each of these manufacturers are somewhat different for mixing. The DeSoto product that we worked with, both with low pressure and high pressure systems required much more water to reach the application viscosity than their container mix specifications required. We were working under two constraints. One, we were give the constraint as to what parts of the material and how much water to use. Secondly, we were given a constraint to use 20 seconds viscosity for draining the material from the cup. So, we were working to get a viscosity that our people are use to working with, one they have worked with in the past with their MIL-P-23377.

We had to use quite a bit of water when working with the DeSoto material. What we found when we applied this material is that it covered the plate, but it gave a mottled appearance both with the low pressure and the high pressure systems. When working with the Crown Metro material, we used the mixture called out on the container and it gave a very thick viscosity. We would liked to have reduced it further. But, we were working with this with the painter's help at the end of the day. We were using the mixture prescribed on the container with a high viscosity and we applied

it. We got a very spotted application. I think this is probably what the people at McClellan have encountered or something like this. We feel that there is an answer to this problem with the waterborne primers. We needed mechanical help in mixing to work this material into a lower viscosity. In other words, what we are saying, we had problems in the way we were working with this material. We feel there are some things we can do better that would get us out of the woods. Shortly after we wind up with this meeting today, we will get back to working this problem in the shop. We are going to look at mechanical mixing using a power operated stirring devise. There are several types of stirrers. We feel that is pretty essential. The product containers do not list the use of these stirring devises. It is going to give us homogeneity and reduce our viscosity to the lowest possible level before we add the water. Then, we can minimize the amount of water we use.

We found out later from the Crown Metro technical service representative that where we were using a 2/1/1 mix, that is two parts A, one part B, the curing agent, and one part water, we could go up to one and a half parts water. He said when we get to one and a quarter parts, be very careful making the incremental additions up to one and a half, but be very careful not to go over that amount. If you do, the molecules will break up and you have nothing to work with. So, there is a cut off point that Crown Metro has indicated. Also, DeSoto has indicated there are variabilities in their materials from batch to batch. What you see with one may require a slight adjustment on the next one. Apparently, it happens to be an attribute of this type of paint that some adjustment and care has got to be used. From our experience so far, it isn't that cut and dried. I think we will have to stand back and work with these things. At least, this has been our experience so far.

We are trying to figure out how we can present our experiences to date without creating confusion and hopefully, a maximum amount of enlightenment. There is a reason for my putting it this way. What we have when working with this material is instructions on the container, instructions from the technical data sheets and instructions from the technical service representatives. All three of these pieces of information may be a little different. When we did our work in the shop, we used the instructions from the containers to give us the directions we needed for the compounding and applying to the plates. We very slightly varied the viscosity of the DeSoto where we were using tech service management. We found the 20 seconds viscosity varied different from the compound mix on the container.

One of the concerns I can see down stream, both for depots and command bases is receiving materials from the lowest bidder. We have any one of three different materials here. Each of these materials require special handling, special compounding, mixing and some attention in the application area. It seems like what have to do is an evaluation of each material and prepare a process order for each company. The process order will combine experience from working with this product with the information we have received from the companies. What we have done with the outline in your brochure is to list the difference between the three companies. We started with Crown Metro. We listed the maintenance instructions and then the technical instructions. The last information is from the technical service representative. Over a period of time, we have obtained more information on how to better work with their product. The Crown Metro plate shows thick application, so we are going to reduce the viscosity to get the desired application and to give it an induction period. The -85582 specification does call out an induction period. The Crown Metro people said an induction period is required for their mix. The DeSoto and Deft products do not require it. The induction period is required after the water is added to allow for the linking of the molecules. It starts to work during this period. They say that it gives a smoother application of the material and a faster cure. You can minimize the time between the primer application and the topcoat. We feel confident that we will have better looking plates with the work we are doing today. We are planning to work with the HVLP system.

Although Utah does not require it right now, they indicate that it is not too much in the future before we have to go to the HVLP system. With the 65 psi conventional system, we are still meeting all of the requirements. With the low VOC and high pressure, we are still within the law. We don't know how the law may change, so we are trying to go to the low pressure system now. We are trying to work all of these things at the same time so we will be in a position to meet the requirements, what ever they are.

The DeSoto product failed several tests in the laboratory because of all of the water we had to add. One of the first we did after curing seven days is an MEK solvent wipe test. The DeSoto material did not pass that test. Also, it came out soft. after immersion in lubricating oil for twenty-four hours. We could scrape it with a thumb nail. We could also scrape it with the thumb nail after immersion in water for four days at 120 degrees. The Deft and Crown Metro didn't fail these particular tests. The DeSoto representative wasn't sure if the failures were from a bad batch or what it was. We haven't heard back from him at this time. We do feel from the appearance of it that we may have made a mistake in the way we mixed it.

We want to go back and test it over by using better mixing, better compounding and spend a little more time with each one. The Deft material mixed well and applied well both, with the low and the high pressure systems. They did not have any problems other than a little roughness on time on an external fuel tank. That was the first application with the waterborne primer. We had three quarters of the tank that looked real good and the rest was rough. We don't have a concern about Deft.

We do have plates with these materials in a salt spray test and a filiform corrosion test per the -85582 requirements. We are going to look at some other aspects of that application. We are not looking to necessarily to remove these products from the QPL in the future. We do feel we have problem with the mixing and want to give them chance to work. we will go back and look at our compounding, our mixing and our induction period. We feel we can put a better product together for the test. With all of the variations we have seen working, we feel that we will have to put together a process order with all of the instructions for each of the manufacturers. Copies of this will be available for the depot and all of the using commands. Thank you

PAINT SPRAYING SYSTEMS - *Jim Caldwell, OO-ALC/MABEB*

CHAIRMAN'S COMMENTS: Before the break, the question come up about the high volume, low pressure system and which ones we recommend. I might mention we do not recommend any equipment at all. We can get our tail bones in a kink and one of the suppliers down on the corner can come back and ask why we are recommending them and you don't recommend us. All we can do is to pass on our experiences with the equipment. Undoubtedly, there is better equipment in the field and there are some of the lower grades. We will call on Jim Caldwell to talk about the equipment we have and the knowledge he has about some of the other equipment.

We are trying to solve the problem of transfer efficiency of application of the paints. We are toying with the possibility of electrostatic painting. The aircraft we are painting has fuel in them. That eliminates the possible use of electrostatic painting. The DeVilbiss company was doing a demonstration of their high volume, low pressure system. I didn't get a chance to see that demonstration. However, I did get a chance to see the results. I invited the salesman to come over to our facility and check it out. I walked him through it and then he came by a couple of weeks later and demonstrated his product. It was interesting, but we also wanted to

check out some products from other companies. So I did some investigating. the only group I could get to come by for a demonstration in a reasonable time was the Pan Am company. They brought in their system. Their's was a pretty nice system except that it necessitated the use of a large, expensive turbine to keep the air dried out , free from moisture and oil. I got together with the painting group and got some preliminary evaluation. It was kind of like what we saw with the DeVilbiss group because it was very light weight and very mobile. The output was very good, but the big selling point with his high volume low pressure system was getting a comparison.

We took an F-4 and painted one side with the conventional system and the other side with the HVLP simultaneously. The difference in transfer efficiency was very, dramatic. For those who don't understand transfer efficiency, if you have 25 percent transfer efficiency, you have 25 percent of the paint going on the object being painted and 75 percent is going into the atmosphere. With the conventional paint system with between 65 and 100 psi, you are lucky to get 25-30 percent transfer efficiency with 70-75 percent going into the atmosphere. In California you have to have a minimum of 65 percent transfer efficiency. They only allow 35 percent going into the air. An analogy of comparing the atmosphere in Ogden with the atmosphere in southern California during a smog can be applied with the test on the F-4. You could hardly see the painter, there was so much mist with the conventional paint system. It was totally the opposite with the HVLP painting system. We have pictures during the different painting operations that we took of parts of the F-4. One was very dramatic showing a painter standing on the wing, painting. You could see he was painting because your could see slight focus between the gun and the surface being painted. You could see right through it. It was very clear. In the case of the conventional system, you would be lucky to make out the painter because of all of the mess. Like Leon says, we cannot recommend any particular brand. We picked the DeVilbiss because we liked the results. It appears to be very easy to operate. The painting group that actually does the painting was for it 100 percent. There are some other systems, Acusystems and Binks makes a pretty good ones. They are pretty reliable companies. I understand that Greco has come out with one, also. We are satisfied with the DeVilbiss we have and we get pretty good customer support from the DeVilbiss people. In some respects, they are using us as a test base. They haven't been that big of a supplier to the government as far as the HVLP system is concerned. They contact me periodically to find out how we are doing. I have had to contact them a few times on certain parts of the equipment. We felt they should do certain things a little differently. They have taken some of our

recommendations and put them into use. We are pretty much sold on the HVLP system. In respect to the use of the waterborne primer, I talked to DeVilbiss people about it and they say it should work very satisfactorily. They say we shouldn't have any problems. I think the Deft primer is the only one that did work well with the HVLP system. You do get a good surface coat and with the other two, we had to use a high pressure system to get the same results. Thank you.

USE OF HIGH SOLIDS POLYURETHANE TOPCOAT, MIL-C-85285 - Board Chairman

Use of High Solids Polyurethane Topcoat, MIL-C-85285: EPA is also putting pressure to reduce the VOC's on the polyurethane topcoats. Instead of changing carriers in this product, the developers have increased the solids content in this coating. The Air Force Corrosion Program management Office briefed this material at the 1989 CPAB meeting. They briefed it as having a relatively short pot life of four hours: it takes 16 hours of cure to touch; it goes on much thicker with less overspray; and the cost is $75 per gallon compared to $38 for a two gallon kit of the MIL-C-83286. They briefed it must not be used unless you absolutely have to. It is not a proven product. Since that time, we have included it in the materials list of our tech order because of the EPA requirements. As of this writing, we have not done any work with it on this depot. We suspect EPA will be putting pressure on us before long to make the switch. We find there is three vendors for this material. They are DeSoto, Deft and Axel Coatings. Stock numbers have been assigned and are listed below. GSA manages the contract while the Navy manages the MIL-Spec.

COMPARISON OF PLASTIC BEAD BLAST MATERIALS, MIL-P-85891 (DuPont Lease Agreement) - Board Chairman

Many of you are starting to get your plastic blast booths in. I have an idea you people from Kim Hae will be interested in talking with us about getting a booth in your facility. A couple years ago, I put a copy of this MIL-Spec in the minutes from this meeting. If your have had an opportunity to review it, you will find there are five types. The five types are really the different materials they are made from. We have filed for stock numbers on them. We have not received these numbers yet. When we do, we will list them in a follow up to these minutes. What you are going to have to decide when you go into this process is what you are going to want from it. The five types in addition to the different base materials also have different hardnesses. Also, in most cases, there is only one vendor for each of the five types. Type V is a thermoplastic made by

DuPont only. I understand that U. S. Technology has qualified a product for this type. About the only vendor we have for the type II is U. S. Technology. Type I is a rather soft media and is known by the U. S. Technology part identity as Poly Plus. It has a 3.0 Mho hardness. The Air Force Corrosion Program Management Office commissioned the Bettelle Laboratories to study the process. There findings indicated that this product will adequately remove the coating with less damage to the substrate. General Smith at HQ AFLC directed that since the studies indicated this to be the ideal material, this is what will be used through out the Air Force. We used that material on two aircraft. We found the strip rate to be considerably less than what we had been use to. The time needed was about two and a half to three time that of the Type II we had been using. It tends to dust out a lot faster and we were not getting the beads through the hose as many time as with the Type II. We were getting a lot more waste product. After the two aircraft, we sent a letter to AFLC informing them of our experience and that we were returning to the Type II material. They returned a letter of concurrence to us.

Type II material has a hardness of 3.5. The paint has a hardness of about 2.8. This extra little bit of hardness is enough to give an acceptable strip rate while giving us more passes through the hose. It produces about 1500 pounds of waste product per aircraft. It will go through the hose five or six time before it breaks down and passes out as dust. Type III has a 4.0 Mho hardness. We are not using this material anywhere on the aircraft. We do have one organization on the base using this material, But, they are blasting heavy hydraulic components. Presently, we do not have any vendors for the Type IV material. The only vendor we have had any experience with the Type V material is the DuPont company. The People at McClellan AFB as well as our own Maintenance Engineering people are sold on this product. This feeling is not shared by the maintenance people doing the work. It has a Mho hardness of about 3.2 giving a slower strip rate. Those people who are sold on this products claim that we are talking cups as compared to gallons of waste product. This has not been proven as yet. We have experience one problem with the DuPont material in our operation. The problem is that we are having the dust sticking to everything and it is not clearing out of the booth. We have an 80 mesh screen for this to pass through before is will go out as dust. We are going to increase this size to a 60 mesh which means that it will leave the system sooner. In doing this, our waste product will increase. How much, we really do not know. To solve our difference of opinion, our Maintenance Engineering is doing some testing in the comparison of the two materials. We have Type V in one of our booths and Type II in the other. They are watching the accumulation of the waste product, amount of material being

added to the booths and the strip rate. We are going to equalize all factors in both booths and push an F-4 into one booth and strip one side then move it to the other booth and do the other side. This will minimize the number of variables involved. We plan to do this as soon as we get the new separation screens for our system.

The waste material from this process is considered to be a hazardous waste. The two heavy metals giving you trouble are chrome and cadmium. We suspect the cadmium is coming from the fasteners on the aircraft. You are only allowed one part per million in you product. The chrome is coming from the paint being removed. The allowance for this is twelve parts per million. This product requires special handling. Regardless how you dispose of it, you will remain responsible for it cradle to grave. Regardless how long it has been since you disposed of it, you are still responsible for it. Ensure a reputable company is contracted if that is the method you chose for disposal.

As you become operational, you will have media salesmen camping on you door step trying to sell you media. They are going to tell you some grand and glorious stories about their product. This material is being managed through GSA and does have a MIL-Spec. Soon, we will have stock numbers for it. DuPont will try to sell you a lease agreement for their product. The DuPont company will tell you that if you buy their lease agreement, they will take back the waste product and relieve you of all responsibility. they will tell you that you are developing a waste product for them that they have a market for. They plan to take your product, melt it down and allow the hazardous materials to fall out. The clean plastic will be sold off to third world countries. The hazardous material will then be encapsulated in plastic and is no longer considered a hazardous product and they will dump it in their own landfills. A copy of this lease agreement is included as Attachment 3. The DuPont material is presently selling for about $1.56 per pound without the lease agreement and $3.15 with the agreement. We are leery about this agreement and we have asked the Air Force Corrosion Program Management Office to obtain an Air Force wide or DOD wide legal opinion on this matter. Until we have received that opinion, we are strongly recommending that you do not enter into the agreement with the company. There are other ramifications in that agreement that worry me and I wouldn't want to enter into that type of an agreement. If DuPont cannot relieve you of the responsibility of the hazardous material, then you will be paying them about $1.50 a pound to dispose of your product where we are paying other contractors about $0.11 a pound. At the present time, The DuPont material without the lease agreement is costing about $0.12 a pound to more that the other products to buy.

QUALIFICATION OF MATERIALS - Board Chairman

Qualification of materials: Essentially, the 3M Comapny has a monoply on tapes in the government. We are at their mercy when they want to increase prices. For example, a year ago, we were paying $8.25 for a two inch roll of bead blast tape that is ten yards long. Today, we are paying $10.56 for that same roll of tape. For that reason, we are looking for other vendors to offer some competition. We are experiencing many incidences where contractors are wanting to get into the plastic media blast (PMB) program. One of the more lucrative areas appears to be the blast tape. Initially, the 3M Corporation had provided a tombstone stencil tape for testing. It worked fairly well except it had a tendency to come off from the aircraft. They made an improvement on the adhesive which worked for our needs. This tape was the YR500 tape. They have since dropped the YR designation. We have since qualified another tape supplied by the Bron Tapes, Inc. of Denver. These tapes are listed in TO 1-1-8. Other vendors frequently contact us to test their tapes. We are developing a MIL-Spec to cover this material after which the prospective suppliers will qualify their materials through an independent laboratory. In the mean time, the Air Force Corrosion Program Management office (AFCPMO) at Robins AFB GA is depending on the various depots to test and qualify the products. Even the depots don't agree on what standards are to be applied in the qualification of the tapes. The only standard applied by one depot is the length of time required to burn through the tape with a stream of media at a given psi and standoff distance and aimed directly at the tape. Proper blasting procedures will not blast directly at the tape. Blasting is directed away from the tape with the overspray hitting the tape. Rarely will the spray be directed at the tape. The standards applied at this depot include the ease of application, how well it adheres to the surface, how well it will take the pounding of the media, and how well it comes off the surface after blasting. We have experienced some tapes leaving the entire adhesive on the surface, particularly when applied to composites or plexiglass, when the tape is pulled away. Many organizations are getting their blast booths now. Be particularly careful when selecting your tapes. Do not uses anything that is not listed in your equipment peculiar tech order or in TO 1-1-8. This material has been stock listed and the numbers are shown below. These numbers are for the 3M Company only. However, action has been taken to include the Bron Company under these numbers. The material is also coded for local purchase. Action has been taken to change this to GSA manage and distribution.

We have taken similar action on other tape products. The Bron Company has also qualified their aluminum back tape and have been included in the stock listings for the material. The 3M part number for this product is 425. The stock listing shows about seventy numbers for this material. Further research shows only eleven active numbers. They are listed below.

MIL-T-21595 masking tapes, only have one vendor. Recently, the Bron Company has qualified their fine line tape under the type 3 category and has been listed accordingly. They are in the process of qualifying their other items to the remainder of the MIL-Spec.

STOCK LISTING OF MATERIALS - Board Chairman

Stock Listing of Materials: Action has been taken to obtain stock numbers or have been initiated on many of the materials used in our program. They include:

a. Semi-gloss polyurethane topcoat, MIL-C-83286:

COLOR NUMBER	SIZE OF KIT	NSN
26270	QT	8010-01-262-2980
	GAL	8010-01-262-2981
26118	QT	8010-01-262-2978
	GAL	8010-01-262-2979

Vendors: Deft, DeSoto and Crown Metro
Managed: GSA
MIL-Spec: Air Force

b. High Solids polyurethane topcoat, MIL-C-85285, Type 1:

When this material was adopted and transferred to GSA, they obtained stock numbers for nearly all colors but the two used on the F-4 aircraft. Action has been initiated to obtain the numbers for these colors. We will forward this information upon receipt.

Vendors: Deft, DeSoto, and Axel Coatings
Managed: GSA
MIL-Spec: Navy

c. Waterborne primer, MIL-P-85582:

(1) Type I, Class 2 (Preferred)

KIT SIZE	NSN
GAL	8010-01-292-8893
QT	8010-01-292-8894

(2) Type II, Class 2

GAL	8010-01-294-7781
QT	8010-01-294-7782

d. Chemical conversion coating, MIL-C-81706, Class 1A (Form III premixed):
TO 1-1-691 gives stock numbers of this material in the pint and gallon containers. However, there are occasions when these sizes are inadequate such as for use in the depot where large quantities are used. A national stock number (NSN) has been assigned and is managed by GSA. The number is 8030-01-314-3567. For additional information, contact GSA, Pat Austin, (206) 931-7900.

e. Tape, pressure sensitive adhesive, aluminum backed:

WIDTH	NSN
1/4 In	7510-00-754-2408
1/2 In	7510-00-806-4669
5/8 In	7510-00-139-3834
3/4 In	7510-00-654-9811
7/8 In	7510-00-139-3823
1 In	7510-00-720-7516
1 1/2 In	7510-00-754-2522
2 In	7510-00-684-8803
WIDTH	NSN
3 In	7510-00-816-8077
4 In	7510-00-982-3955
6 In	7510-01-179-0662

The 1/4 in, 3/4 in, 4 in and 6 in materials are presently coded for local purchase. However, action has been initiated to change this to GSA managed. GSA has confirmed that the other seven materials are in stock and can be ordered through normal channels.

Vendors: 3M and Bron Tapes, Inc.

Bron Tapes does not show in the micro fische because they are newly qualified. Their Address is:

Bron Tapes
845 Navajo
Denver CO 80204
(303) 534-7387

f. Bead Blast Tape:

WIDTH	NSN
1 In	7510-01-300-2124
2 In	7510-01-300-2125
3 In	7510-01-300-2126
4 In	7510-01-300-2127

Vendors: 3M and Bron Tapes
Managed: Local Purchase. When stock numbers were assigned, only the 3M Corporation was listed as a vendor. Action has been initiated to include the Bron Company. Also, these numbers were coded as local purchase at the time. We have taken action to change this to GSA management. The 2 inch width can also be obtained under stock number 9320-01-299-3333.

g. Many complaints have been received from the field about the masking tape being received from the supply system. They have been getting the Sure Tape, Tuck Tape, etc. Supposedly, MIL-T-21595 had been developed to ensure a good quality tape was supplied for painting of aircraft. The research we have completed indicates that 3M is the only product qualified to this MIL-Spec. However, we receive reports that these other tapes are being issued in place of the 3M product. Following is a listing of national stock numbers assigned to this MIL-Spec. Check the numbers you have been ordering to determine if they match these numbers. Let us know if you continue to receive these extraneous tapes.

NSN	CAGE	P/N	WIDTH
7510-00-685-2395	26066	321	2 IN
7510-00-685-2450	26066	321	
7510-00-685-2470	26066	321	3/4 IN
7510-00-685-2471	26066	321	3 IN
7510-00-684-8784	26066	321	1 1/2 IN
7510-00-685-4963	26066	321	1 IN
7510-01-128-4835	26066	321	2 IN

h. Plastic Blast Media:

Action has been initiated to obtain national stock numbers for Grade A and Grade B media in five types and six sizes. A total of 60 numbers have been requested. this information will be forwarded upon receipt.

25 HOUR INSPECTION - Board Chairman

25 Hour Inspection: A few years back, the board made the determination that the paint system on the aircraft should be inspected periodically and defects were to be repaired before they had a chance to enlarge. An inspection was added to TO 1F-4C-6 to inspect ever 25 hours and repairs completed within 15 working days after inspection. A recent review was made of the -6 requirements and the review panel questioned this inspection. A survey was made of several field units for their position on this inspection. The majority of the units surveyed chose to leave the inspection as is. The remainder of the units requested the deletion of the requirement. We were called into meet with the panel and we were able to impress on them the importance of the inspection. They asked if it could be moved to one of the other inspections and we convinced them that the time period between the other inspections are too great to allow for proper maintenance of the paint system. We mentioned that this decision was one made by the CPAB and that no changes can be made without the boards concurrence. They asked if this could be made part of the discussion during this meeting. We did agree to bring it up.

After a discussion with the board at this meeting, the inspection will be moved to a special inspection every ninety days with defects being repaired within 15 calendar days after the inspection. This change will be made in T.O. 1F-4C-6.

12 JULY 1990
E-3 CPAB AGENDA

1. ADMINISTRATIVE
   - A. INTRODUCTIONS
   - B. CHARTER REVIEW
   - C. DISTRIBUTION LIST UPDATE
   - D. CORROSION CONFERENCES

2. OLD BUSINESS/PRESENTATIONS
   - A. BRIEFING – CARBON DIOXIDE PAINT REMOVAL
   - B. BRIEFING – HIGH VOC PRIMER/PAINT SUBSTITUTION
   - C. ACTION ITEM UPDATE
   - D. BRIEFING – ENGINEERING SERVICES TASK UPDATE
   - E. ACTION ITEM UPDATE (CONT)
   - F. BRIEFING – NATO CORROSION CONTROL PROGRAM
   - G. ACTION ITEM UPDATE (CONT)
   - H. BRIEFING – NACE CORROSION/90 CONFERENCE HIGHLIGHTS
   - I. ACTION ITEM UPDATE

12 JULY 1990
E-3 CPAB AGENDA (CONT)

3. NEW BUSINESS
   - A. OC-ALC/MMKRA
   - B. NAEWFC & E-3A COMPONENT
   - C. 552 AWACW
   - D. MISC TOPICS FROM ATTENDEES

4. ACTION ITEM SUMMARY

5. ADJOURN

CHARTER
FOR
E-3 CORROSION PREVENTION ADVISORY BOARD

INTRODUCTION. Past experience has shown that corrosion in aerospace systems can impede operational readiness, be costly, and jeopardize safety. AFR 400-44 defines the objectives and Air Force element responsibilities aimed at minimizing these threats throughout all phases of weapon system life cycle. The regulation requires that a Corrosion Prevention Advisory Board (CPAB) be set up for each weapon system. The intention is to bring designer, maintainer, and user together so that they may contribute their unique experience to problem definition and the formulation of recommendations for solution. AFR 400-44, paragraph 9a(1), requires that the implementing command set up and chair the CPAB for a system "early in the validation phase." Paragraph 4b indicates AFLC perpetuation of the CPAB "after engineering responsibility has transferred." In compliance with AFR 400-44, this charter defines the purposes, membership, responsibilities, and procedures of the E-3 CPAB.

PURPOSE. The purpose of the E-3 CPAB is to provide guidance to the system manager on the most current methods of providing and maintaining an effective corrosion prevention program for the system (AFR 400-44, paragraph 4b).

MEMBERSHIP. The following personnel are the members and alternates of their respective organizations which constitute the E-3 CPAB:

OPR	ORGANIZATION	ALTERNATE OPR
Vincent Foster	Chairperson (OC-ALC/MMKRA)	Lt Jim Kihle
MSgt Glenn Graham	USAF HQ TAC/LGMC	Capt Craig Hall
Major Uwe Poggenburg	NAEWFC/FCLE	Capt Willy Kessel
David Tanner	OC-ALC Corrosion Program Manager (OC-ALC/MMEO)	Calvin Moore
Sidney Childers	WRDC/MLSA	Fred Meyer
Richard Kinzie	AF Corrosion Program Office (WR-ALC/MMEP)	
Dave Van Horn	The Boeing Company, Seattle WA	Richard Regan
TSgt Robert Farnsworth	552 AWACW/MAEMBS	
HFw Franz-Josef Deckers	NAEWF E-3 Component (LWMQ)	
Kenneth Frey	AFPRO (Det 9)	
	HQ RSAF/LGM	

RESPONSIBILITIES: The specific responsibilities of each member are shown in AFR 400-44 and are hereby referenced as follows: Chairperson: paragraph 4b, OC-ALC System Program Management (SPM) will chair the meeting. Paragraph 4b: WRDC/MLSA and the Boeing contractor members. Paragraph 4b(2)(a): The AF/AFLC Corrosion Programs Management Office (WR-ALC/MME). Paragraph 4b(2)(c): The SPM will ensure participation by OC-ALC/MME.

PROCEDURE: The E-3 CPAB will:

1. Convene at regularly scheduled intervals throughout the life cycle of this system at the times and places arranged by the chairperson. The interval will be every four months unless the chairperson, with a majority of the members, determines more or less frequent sessions are necessary.

2. Review corrosion prevention contract requirements and prepare corrosion prevention design guidance tailored to this program.

3. Conduct plant-site inspections at the contractor and subcontractor facilities to monitor design and manufacture, and ensure quality control procedures for corrosion prevention are adequate.

4. Maintain a continuing agenda or log of specific efforts, problems, discrepancies, etc, with the following for each item:

   a. Definition/Description

   b. Alternatives

   c. Board Recommendation

   d. Responsible Action Individual or Agency

   e. Final Disposition

5. Make recommendations to the E-3 System Manager for all changes, corrections, or improvements which would require action by a specific command or a contractor.

6. Have no authority to direct any command or contractor to take any action as a result of its findings. The board chairperson will make clear the nonbinding, advisory nature of the opinions, findings, suggestions, and recommendations of the board to all parties at all times.

SUMMARY OF E-3 CPAB ACTION ITEMS - JULY 1990

AI	STATUS	AI SUBJECT
87-35	OPEN	Correlation of TOs & Tech Data Additions
88-01	OPEN	Leading Edge (LE) Anodized Skin Corrosion
88-10	OPEN	Change of Magnesium Parts to Another Alloy
88-12	OPEN	Emergency Exit Lghts
88-13	OPEN	Rudder Control Rod
88-16	OPEN	E-3 Wingtip and HF Antenna Corrosion
88-18	OPEN	Main Landing Gear Drag Strut/Shock Strut Corrosion.
88-25	OPEN	Elevator Thrust Hinge Access Panel
88-26	OPEN	COMM/NAV Cabinet Bonding Pad Corrosion
88-28	OPEN	Aerogloss dry wash/polishing compound
88-29	OPEN	Corrosion on Access Doors in Rotodome Hardback
88-30	OPEN	Antenna Pedestal Closure Panels/Splice
88-31	OPEN	Fillet Flap Flaperette Corrosion
88-32	OPEN	Abrasion Resistant Teflon Coating on Faying Surfaces
89-04	OPEN	Use of MASTINOX as an Anti-seize/CPC compound
89-05	OPEN	Bleed Air Ducts
89-06	CLOSED	Spacer - Speaker Support, Nose Gear
89-07	OPEN	VHF Antenna (#1 & 2) Corrosion
89-09	OPEN	Nose Landing Gear Door Aft Rib Corrosion
89-11	OPEN	Inboard Trailing Edge Flap
89-12	OPEN	Fairing Installation STA 960 to 1020, Wing to Body
89-13	OPEN	Wing Production Break STA 725
89-14	OPEN	Nose Landing Gear Trunnion and Bearing
89-15	OPEN	Use of Conductive Sealant
89-16	CLOSED	LIXTON Corrosion Removal/Treatment Process
89-18	OPEN	Review of -6, -23, ACI/PDM Work Specs
89-19	OPEN	Use of Wash Primer
90-01	OPEN	World Enzyme Super Cleaner No. 109
90-02	OPEN	Use of Taxi-way Rinse Facilities

E-3 CPAB Distribution List

CONTRACTOR

The Boeing Company
P.O. Box 3999 , M/S 23-72
Seattle WA 98124

FOREIGN MILITARY SALES

CHUSAFSEC USMTM/LGM
APO NY 09038

NAEWFC/FCL/FCLE/FCL-TCD/PCLO/NAD
APO NY 09055

NAEWF/E-3A Component/LW/LWM/LWFJ/LWMI/LWMQ/LWSG
APO NY 09104

OC-ALC/MMKIT
Tinker AFB OK 73145-5990

OC-ALC/MMKI (NATO Liaison)
Tinker AFB OK 73145-5990

OC-ALC/MMKI (RSAF Liaison)
Tinker AFB OK 73145-5990

OC-ALC/MMKI (UK Liaison)
Tinker AFB OK 73145-5990

OC-ALC/MMKI (ROF Liasion)
Tinker AFB OK 73145-5990

E-3 CPAB Distribution List (continued)

USAF

AFPRO/DET-9
The Boeing Company
P.O. Box 3707
Seattle WA 98124

WRDC/MLSA
Wright-Patterson AFB OH 45433-6533

ASD/ENSA
Wright-Patterson AFB OH 45433-6503

552 AWACW/MA/MAQ/MAAM/MAQY/MAEMBS
Tinker AFB OK 73145-5990

HQ TAC/LGM/LGMC/LGMD
Langley AFB VA 23665-5000

961 AWACS/MACM
APO San Francisco CA 96239

WR-ALC/MMEP
Robins AFB GA 31098-5000

OC-ALC/MMEO/MMEOM/MMSR/MMAR/MMKP/MMKRT
Tinker AFB OK 73145-5990

OC-ALC/MA/MABE/MABECE/MABPCB/MAWW/MAQCI/MAQCP
Tinker AFB OK 73145-5990

28 AD/AC/LGM
Tinker AFB OK 73145

Defense Technical Information Center (DTIC)
Cameron Station
Alexandria VA 22304-6145

CORROSION CONFERENCES

DATE	EVENT
FEB – MAR 1991	AEROSPACE CORROSION CONTROL (1991) (AMSTERDAM)
11–15 MAR 1991	CORROSION/91 – CINCINATTI, OHIO (NACE SPONSORED)
SEP – OCT 1991	TRI–SERVICE CORROSION CONTROL CONFERENCE
27 APR – 1 MAY 1992	CORROSION/92 NASHVILLE, TENNESSEE
8 – 12 MAR 1993	CORROSION/93 NEW ORLEANS, LOUISIANA

TECH ORDER UPDATE

- **T.O. 1E-3A-23**
  - Basic issue 1 Oct 76
  - Change 33 issued 1 Dec 89

- **T.O. 1-1-691**
  - Basic issue 1 Jul 88
  - Revision D issued 2 May 90
  - Operational Supplement (T.O. 1-1-691S-1) issued 15 May 90
  - Air Force supplement due in next several months

- **T.O. 1-1-8**
  - Basic issue 1 Sep 89
  - Change 1 issued 15 May 90

CO_2 OVERVIEW

- HOW CO_2 WORKS
- COMPONENTS OF CO_2 SYSTEM
- ADVANTAGES OF CO_2 BLASTING
- CONCERNS OF CO_2 BLASTING
- OC-ALC ACTIVITIES
- BATTELLE SUPPORT
- DC-3 OSKOSH TAPE

HOW CO2 WORKS

- PREDOMINANTLY A THERMAL PROCESS
- THERMAL
  - THERMAL SHOCK FROM CO2 PELLETS
  - THERMAL CONTRACTION
  - SHEAR STRESSES BREAK BONDS
- KINETIC
  - IMPACT OF CO2 PELLETS DISLODGE PAINT
  - CO2 PELLETS WASH PAINT AWAY
- SUBLIMATION OF CO2 PELLETS

COMPONENTS OF CO2 SYSTEM

- LIQUID CO2 RESERVOIR
- CO2 PELLETIZER
  - LIQUID CO2 CONVERTED TO SNOW
  - SNOW COMPACTED WITH RAM
  - PELLETS EXTRUDED THROUGH DIE
- AIR COMPRESSOR
- HAND HELD GUN
- MAY BE MOBILE ON TRAILERS

ADVANTAGES

- NO HAZARDOUS WASTE GENERATED
- USE EXISTING FACILITIES
- COMPATIBLE WITH OTHER PROCESSES
- MINIMAL MASKING
- CO2 REMOVES SEALANTS, ADHESIVES
- CLEANS HYDRAULIC RESIDUE
- NEAR TERM APPLICABILITY

CONCERNS

- USE ON COMPOSITES
  REQUIRES FURTHER TESTING
- ECONOMICS
  - POTENTIAL SAVINGS ⟩ 25 %
  - NEED TO BE PROVEN
- IMPACT OF FATIGUE LIFE
  REQUIRES FURTHER TESTING

OC-ALC ACTIVITIES

- AQUIRE CO2 EQUIPMENT
  - DERA (MATEP)
  - DEP WITH BATTELLE (MABEP)
- OPTIMIZE BLASTING PARAMETERS
  - MASS FLOW RATE
  - AIR PRESSURE
  - PELLET SIZE, TEMPERATURE, DENSITY
  - NOZZLE SIZE
  - NOZZLE TO SURFACE DISTANCE
  - ANGLE OF IMPINGEMENT

OC-ALC ACTIVITIES
(CONTINUED)

- BLASTING PROCESS CHARACTERIZATION
  - FATIGUE LIFE
  - CRACK GROWTH RATE
  - FASTENER HOLE DURABILITY
- INTERIM REPORTS
- FINAL REPORT

BATTELLE SUPPORT

- PROVIDE OC-ALC WITH EQUIPMENT AND TEST SPECIMENS
- METALLURGICAL ANALYSIS
  - XRAY DIFFRACTION
  - CLAD REMOVAL
  - SURFACE ROUGHNESS
  - FRACTURE SURFACE
- COATING ADHESION TESTING

BATTELLE SUPPORT
(CONTINUED)

- ENVIRONMENTAL
  - EFFECTS OF CO2 PROCESS ON BIOTA AND BLASTING FACILITY
  - EFFECTS OF RELEASING C02 INTO ATMOSPHERE
- HEALTH
  - INHALATION OF PAINT DUST
  - NOISE LEVEL
  - SKIN EXPOSURE TO CO2 PELLETS
- REPORT

AIRCRAFT PAINTING AT OC-ALC

PRIMERS	PROS	CONS
EPOXY POLYAMIDE CURED*	EASY TO APPLY	CRACKS UNDER STRESS
POLYSULFIDE*	GOOD CORROSION PROTECTION FLEX WITH AIRCRAFT	EXTREMELLY HARD TO REMOVE
KOROFLEX*	GOOD CORROSION PROTECTION FLEX WITH AIRCRAFT EASY TO REMOVE	MOISTURE SENSITIVE
WATER-BORNE	EASY TO APPLY AND REMOVE	SURFACE MUST BE SURGICALLY CLEAN CRACKS UNDER STRESS

* WILL NOT MEET SCAQMD, RULE 1124, 340 GRAMS PER LITER VOLATILE ORGANIC COMPOUNDS (VOC)

NOTE: DESOTO IS IN THE PROCESS OF MAKING A HIGH SOLID VOC KOROFLEX

TOP COATS	PROS	CONS
ALIPHATIC POLYURETHANE	VERY GOOD WEATHER RESISTANCE. FLEXIBLE AT LOW TEMPERATURE. FLUID RESISTANCE. COMPATIBLE WITH HIGH PERFORMANCE PRIMERS. TWO COMPONENT, POT [redacted] LIFE (8 HOURS) 60% ELONGATION FOR GLOSS PAINT	REQUIRES TWO COATS ISOCYANATE (0.25%) CAN CAUSE SENSITIVE TO SOME PEOPLE. NO BARE SKIN SHOWN FRESH AIR RESPIRATORS. DOES NOT MEET VOC REQUIREMENTS, 420 GRAM/LITER.

TOP COATS	PROS	CONS
HIGH SOLIDS POLYURETHANE	SAME AS ALIPHATIC POLYURETHANE. REQUIRES ONE COAT. MEETS VOC REQUIREMENTS. 420 GRAMS PER LITER OF SOLVENT.	TWO COMPONTENT, POT LIFE (4 HOURS) LESS FILM FLEXIBILITY. 40% ELONGATION FOR GLOSS PAINT. NO BARE SKIN SHOWN. FRESH AIR RESPIRATORS.

THE SCAQMD GRANTED A WAIVER TO NORTHROP AIRCRAFT COMPANY TO USE ALIPHATIC POLYURETHANE ON THE B-2 AIRCRAFT.

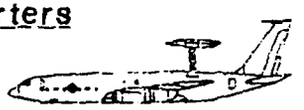
The complete coating system must be high-solids and water-borne by 1996

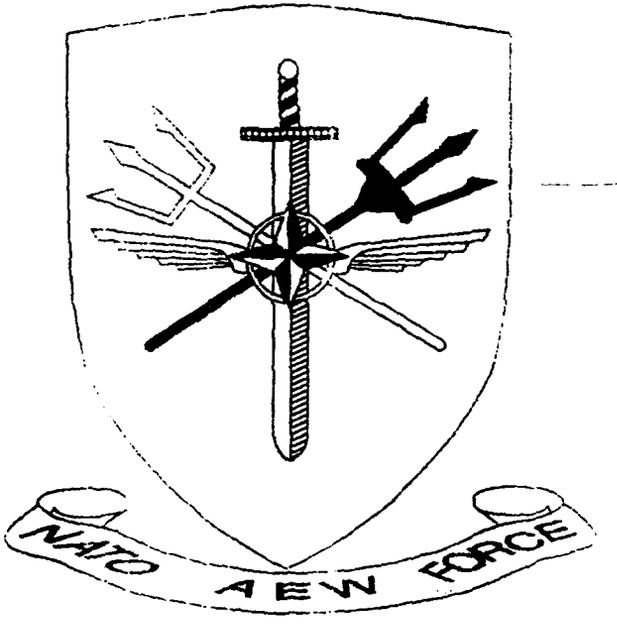
POLYTHIOETHER SEALANT
MIL-S-29574

- PR-1826, CLAS B, TWO PART CHEMICALLY CURING POLYTHIETHER POLYMER BASED SEALANT
- RAPID CURE AT LOW TEMPERATURE TO A FUEL RESISTANT ELASTOMER
- APPLICATION TEMPERATURE AS LOW AS 20 DEGREE F
- COMES IN A KIT: CLEANER, PRIMER AND SEALANT
- ADHERES TO ALCLAD, ANODIZED (MIL-A-8625), ALODINE (MIL-C-5541), TITANIUM, STAINLESS STEEL, COATED SURFACES (MIL-C-27725), AND SEALANT (MIL-S-8802)
- PR-1826 PRIMER WILL PROMOTE ADHESION OF PR-1826, CLASS B TO ITSELF
- HAS A PUNGENT ODOR
- SOLE-SOURSE ITEM

NATO Airborne Early Warning Force Command Headquarters

NATO CORROSION PREVENTION AND CONTROL





prepared for

CPAB

prepared by

NAEWFC

NATO Airborne Early Warning Force Command Headquarters

OVERVIEW

- BACKGROUND
- PROBLEM AREAS
- ACTION REQUIRED
- STATUS
- INTERFACE

NATO Airborne Early Warning Force Command Headquarters

BACKGROUND

- CORROSION SIGNIFICANTLY IMPACTS CONTINUOUS AND SAFE OPERATION OF THE NATO E-3A/TCA FLEET AND RESULTS IN MAINTENANCE DELAYS AND OPERATIONAL DOWNTIME.
- NATO DOESN'T HAVE AN APPROPRIATE MEANS TO COLLECT, STORE AND ANALYSE CORROSION DATA BY AN AUTOMATIC DATA PROCESSING SYSTEM.
- CORROSION DATA ARE AVAILABLE FROM DIFFERENT SOURCES, BUT ARE NOT COORDINATED AND PROPERLY USED TO ENSURE A CONTINOUS ANALYTICAL PROCESS AND TO GENERATE SUITABLE CORROSION CONTROL, TREATMENT AND PREVENTION MEASURES AND PROCEDURES.

NATO Airborne Early Warning Force Command Headquarters

PROBLEM AREAS

- POOR A/C PROTECTION
- APPLICATION AND ACCEPTANCE OF ENHANCED CORROSION PREVENTION COMPOUNDS
- INADEQUATE PAINT/PAINT REMOVAL SYSTEMS
- INADAQUATE WASHING PROCEDURES
- INADEQUATE REPAIR PROCEDURES AND WEAR LIMITS
- INADEQUATE INSPECTION TECHNIQUES AND TOOLS
- MISSING SPARE PART LOGISTIC CONCEPT
- ENVIRONMENTAL CONDITIONS (AGGRESSIVE HUMIDITY)
- MISSING CORROSION DATA MANAGMENT

NATO Airborne Early Warning Force Command Headquarters

ACTION REQUIRED

- OPTIMISE USE OF AND MONITOR TEST SERIES WITH ENHANCED CORROSION PREVENTION COMPOUNDS
- REVIEW AND UPDATE
  - PAINT/PAINT STRIPPING PROCEDURES
  - WASHING PROCEDURES
  - MATERIAL REQUIREMENTS
  - REPAIR PROCEDURES AND WEAR LIMITS
- EVALUATE AND TEST ENHANCED INSPECTION TECHNOLOGIES AND TOOLS
- IMPROVE SPARE PART SITUATION
- EVALUATE AIRCRAFT DEHUMIDIFICATION SYSTEMS
- DEVELOP A CORROSION PREVENTION AND CONTROL *PROGRAM IN ORDER TO COORDINATE AND MONITOR* ABOVE ACTIONS.

NATO Airborne Early Warning Force Command Headquarters

ACTION REQUIRED

THE CORROSION PREVENTION AND CONTROL PROGRAM WILL IMPLEMENT A CORROSION DATA MANAGEMENT SYSTEM BY MEANS OF A(N)

- CORROSION DATA COLLECTION AND RECORDING SYSTEM
- COMMON DATA BASE
- DATA PROCESSING TO
  - MONITOR, TRACK AND TREND DATA
  - CONTROL AND VERIFY THE EFFICIENCY OF DEVELOPED MEASURES
  - SUPPORT NUMERICAL ANALYSIS
- ENGINEERING CAPABILITY FOR DATA ANALYSIS AND GENERATION OF OUTPUTS TO IMPROVE
  - CORROSION CONTROL MEASURES
  - CORROSION TREATMENT MEASURES
  - CORROSION PREVENTION MEASURES

NATO Airborne Early Warning Force Command Headquarters

STATUS

- A NATO CORROSION PREVENTION AND CONTROL BOARD HAS BEEN ESTABLISHED TO COORDINATE AND MONITOR ALL NECESSARY ACTIVITIES TO REDUCE EXISTING AND PREVENT FUTURE CORROSION.
- THE FIRST MEETING WAS HELD AT 24/25 APRIL 1990 AT FORCE COMMAND DEFINING THE CURRENT STATUS OF ACTUAL E-3A/TCA CORROSION PREVENTION AND CONTROL ACTIVITIES.
- BASELINE REQUIREMENTS TO ACCOMPLISH A NATO CORROSION PREVENTION AND CONTROL PROGRAM HAVE BEEN DEFINED IN THE BOARD'S TERMS OF REFERENCE.

NATO Airborne Early Warning Force Command Headquarters

STATUS

PERMANENT BOARD MEMBERS:

- NAEW FORCE COMMAND
- E-3A COMPONENT
- NATO MAINTENANCE AND SUPPLY AGENCY (NAMSA)
- PRIME CONTRACTOR
- SOURCES OF REPAIR (SORs) FOR THE AIRFRAME
- NATIONAL QUALITY ASSURANCE REPRESENTATIVES (NQARs)

NATO Airborne Early Warning Force Command Headquarters

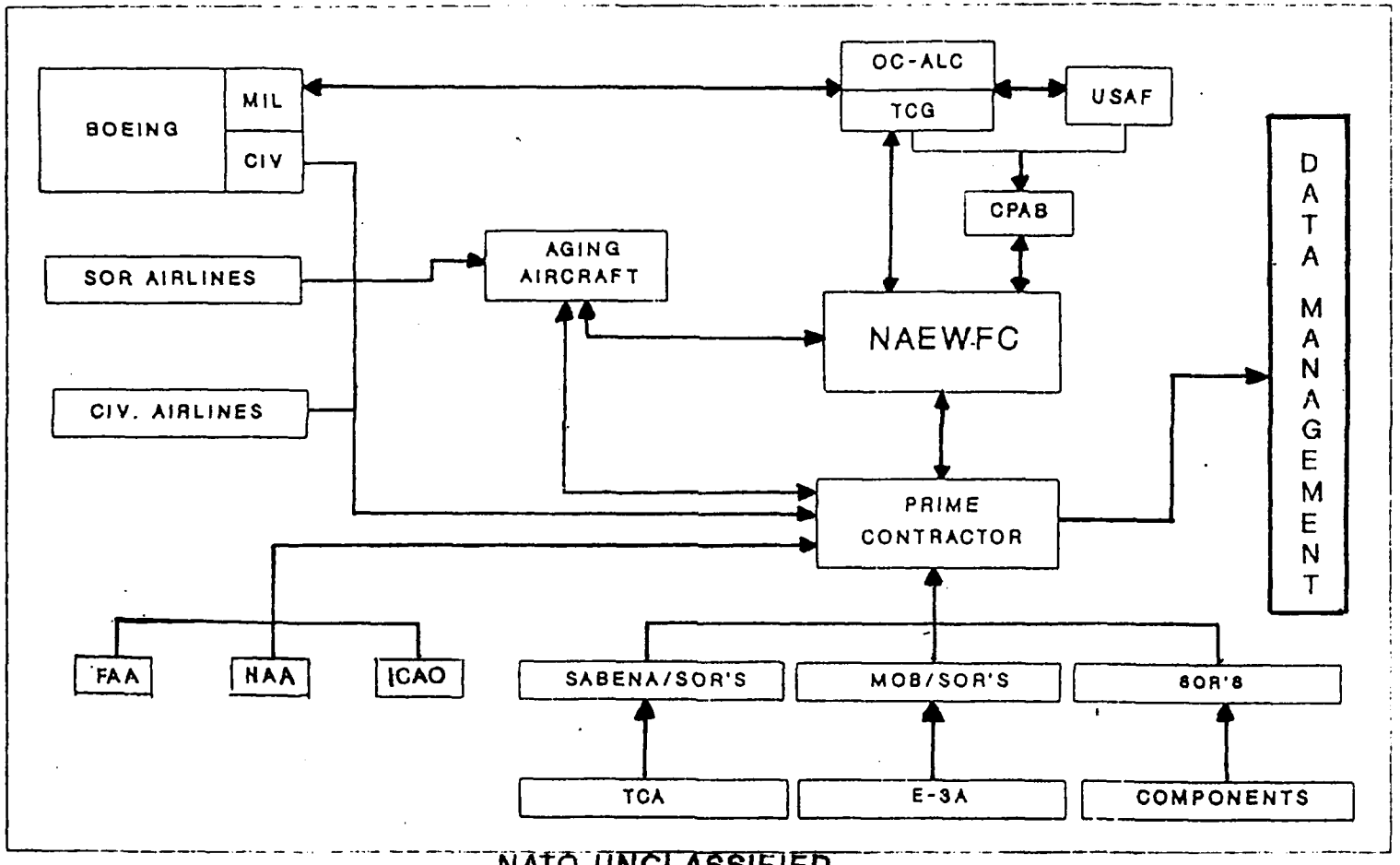
INTERFACE

PLANNED INTERFACES:

- CLOSE COORDINATION, COMMUNICATION AND DATA EXCHANGE BETWEEN CPAB AND NCPCB
- CONNECTING LINK BETWEEN OC-ALC/MMK AND NCPCB BY TCG DETACHMENT AT FORCE COMMAND (TCD)
- RELEASABILITY OF DATA RESOURCES FROM
  - USAF
  - BOEING
  - OTHER E-3 SUBCONTRACTORS

NATO Airborne Early Warning Force Command Headquarters

INTERFACE



CPAB 10

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 87-35

ORIGINATOR

SUBJECT: Correlation of TOs & Tech Data Additions

BACKGROUND DATA:

PART NUMBER:

NSN:
DRAWING(S):

NAME: HFw Franz-Josef Deckers
ORGANIZATION: NAEWF E-3 Comp.
TELEPHONE: 01-49-2451-63-6215
DATE SUBMITTED: Nov 1987

TO(S): 1E-3A-23, 1E-3A-6
FIGURE:
INDEX:
WORK UNIT CODE:

PROBLEM: Current tech data must be updated to include more frequent corrosion inspections, corrosion preventive compound application and reapplication, and corrosion rework instructions.

RECOMMENDED ACTION: Review TO 1E-3A-23 and TO 1E-3A-6 and make changes to specify the use of MIL-C-85054 in appropriate areas.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

19 July 1988:

1. Final draft of changes being done. Section 9 of TO 1E-3A-23 being deleted and replaced with a more comprehensive expose' of CPC reapplication in various areas. These areas were determined as excellent candidates for frequent inspection/ reapplication of CPC's. These areas also are detailed in more inspection requirements added to TO 1E-3A-6. The changes were done due to a review of -23, -6, Boeing Corrosion Prevention Manual, Boeing 707 Maintenance Manual, NATO E-3A Component proposed corrosion inspection/CPC application work cards, discussion with OC-ALC/MMEOM, and 552nd AWACW Corrosion Shop personnel. No RCM analysis was required for -6 changes since all inspections are existing inspections in the Boeing Corrosion Prevention Manual and the 707 Maintenance Manual.

2. Draft copies of Tech Order Changes are available from OC-ALC/MMKRA.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
OC-ALC/MMKRA	Vince Foster	Aug. 1989

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 87-35

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

May 1989:
NAEWF E3-A Component accomplished one phase inspection with additional requirements to access areas included in the proposed changes to T.O. 1E-3A-6. The NATO briefing is included in the minutes of the 24 May side meeting at OC-ALC. These minutes are included as attachment 3.
MMKRA is re-evaluating the proposed changes to stagger the inspections requiring excessive manhours for access.

Nov 1989:
552nd EMS/MAEBC Corrosion personnel preparing a local corrosion work deck to be performed during a 10 day down time period. Work deck would include previous corrosion inspection/rework requirements as well as the new and proposed requirements. This 10 day down time is waiting for approval/disapproval.

The majority of the proposed areas have been added to the ACI/PDM program. However, six year intervals for inspection/reapplication of CPC's is too long. Corrosion inspection/CPC application must be done frequently at O/I level.

16 Nov 1989:
OC-ALC/MMKRA will review T.O. wash procedures to ensure proper washing, CPC application, and lubrication.

NAEWF E-3A Component will test non-cleaning of various areas to determine effects on corrosion and appearance. NAEWF E-3A Component cannot use the detergents that are specified in the Tech Orders.

12 March 1990:
OC-ALC/MMRA has reviewed Tech Orders and wash procedures are adequate. However, T.O. changes will be made requiring masking of all lubrication points to prevent water intrusion.

After application of Dinitrol AV25 CPC on two NATO aircraft by E-3A Component, inspection on first phases prior to wash was done to determine what areas to clean. On one aircraft, 79-0445, cleaning was not done on the N/MLG wheel wells (except MLG truck, strut and follow

(continued)

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 87-35

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

up doors) and wing leading/trailing edge wells based on clean appearance and CPC coating. On A/C 79-0457, all areas were washed, including N/MLG wheel well and wing trailing edge wells, to determine how much CPC would remain on the structure after cleaning. Inspection after wash revealed a light coat of CPC was still present in almost all areas. Therefore, only a light CPC touch up was required.

Boeing will investigate the specific requirements/locations necessary to properly mask lube points during washing. OC-ALC/MMKRA will review response and make Tech Order changes as appropriate.

552 EMS/MAEMBS will continue working on a draft O/I corrosion control work deck, and reports that a draft should be complete in the May-June 90 time frame. Once complete, MMKRA, MMKRTA, and 552 personnel will coordinate a method for implementation, whether in conjunction with phase activities or as a separate O/I activity.

NAEWF/E-3A Component will continue testing non-cleaning of various areas to determine effects on corrosion control and appearance.

July 1990:

SOW for wash/lube EST received from Boeing by MMKRA. No EST will be pursued until further investigation done with 552 AWACW on wash procedures.

NAEWF/E-3A Component reported that no corrosion was being seen in areas that were not being cleaned. Boeing noted that in many areas excessive cleaning removes "protective" grime and induces corrosion. MMKRA will investigate non-cleaning of certain areas, particularly landing gear.

552 EMS/MAEMBS reported that corrosion work deck would be done and ready for review in the next 1-2 months.

OC-ALC/MMKRA will ensure soap sample supplied by E-3A Component is tested for use by OC-ALC and/or WRDC/MLSA labs.

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-01

ORIGINATOR

SUBJECT: Leading Edge (LE) Anodized Skin Corrosion

BACKGROUND DATA:

PART NUMBER:

NSN:

DRAWING(S):

NAME: Vince Foster
ORGANIZATION: OC-ALC/MMKRA
TELEPHONE: (405) 736-3660
DATE SUBMITTED: May 1988

TO(S): 1E-3A-23, 1E-3A-4-57-1/-55-1
FIGURE:
INDEX:
WORK UNIT CODE:

PROBLEM: LE anodized skins adjacent to steel fasteners corrode. The skins are too thin to rework, and wind erosion makes it difficult for protective coatings to remain on the surface.

RECOMMENDED ACTION: NATO will apply MIL-C-85054 to LE skins and report on amount of protection it provides and the length of time it lasts before eroding.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

15 Sept 1988:
NATO ordered MIL-C-85054 and is awaiting receipt to proceed with testing.

1 Nov 1988:
552d AWACW will apply MIL-C-85054 to E-3 wing leading edges and monitor the aircraft to determine the effectiveness of the CPC.

15 Nov 1988:
3M leading edge tape was identified as a possible solution. Conflicting data from B-52 experience was received from MMKRA & MMETM. The LE tape may not be effective on E-3 skins where corrosion cells have already set up.

MMEOM identified MIL-C-82594 as a candidate for providing an external seal for the fasteners on the LE skins. MMEOM will test this CPC/sealer on an E-3, track the aircraft and report on the CPC'S effectiveness.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
NAEW E-3 Comp/MMKRA	F.J. Deckers / Vince Foster	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-01

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

15 Nov 1988 (continued):
Two USAF aircraft are being scheduled into depot for LE skin replacement in FY 91.

Questions were raised about the use of titanium fasteners as opposed to steel fasteners. Aluminum plated titanium fasteners offer a weight savings over cadmium plated steel fasteners and are preferred by the manufacturer. Both fasteners will be included in tech data and both fasteners must be installed wet with sealant to realize a significant reduction in corrosion.

Feb 1989:
B-52 PRAM Project initiating the use of the 3M Polyurethane leading edge tape was very successful. The tape readily adhered to the leading edge skins, even when it was not applied correctly. No corrosion was found after removing the tape. The tape was applied to B-52 leading edges for 1 year (600 flying hours). The material adhered for the duration of the test and is projected to last up to 4 years. It can be installed at field level during routine phase inspections. T.O. procedures are being developed and will be included in T.O. 1E-3A-23. We recommend applying the tape to the USAF fleet in conjunction with the LE skin replacement beginning in FY91. Applying the tape over skins that are already corroding may hide the corrosion problem. MMKRA will include LE tape application in the SOW for LE skin replacement.

May 1989:
NAEWF E-3A Component applied Amlguard to LE wingskins on A/C 79-0442. After 230 flying hours, almost all of the CPC was gone, but some slight milky traces were present. The Component also applied Dinol AV 50 and AV 100 to some LE anodized wingskins. The skins were inspected after 228 and 357 flying hours. The CPC was still present, except in the bullnose area.

Nov 1989:
MMKRA has included LE tape application beginning FY91 LE skin replacement. Fasteners will be installed wet with MIL-S-81733 and steel fasteners will be replaced with titanium fasteners. MMKRA is investigating a test of the tape by applying over paint, directly on the skins without any paint, and directly on the skins with paint over the tape.

(continued)

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-01

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

16 Nov 1989:

OC-ALC/MMEOM will provide test results of MIL-C-82594 CPC/Sealer on wing leading edges, in coordination with OC-ALC/MMKRA and 552 AWACW/MAQ.

NAEWF E-3A Component will test Dinitrol AV40 on wing leading edges and report results at March 1990 CPAB.

12 Mar 1990:

E-3A Component applied Dinitrol AV40 to anodized surfaces of both wing leading edges. After 230 flying hours, CPC was eroded on bull-nose area, but less as compared to AV50 and AV100. Dinitrol AV40 will be applied to another aircraft with different surface preparation prior to CPC application and results reported at July 1990 CPAB.

USAF Corrosion Program Office, Mr. Thomas Merren, WR-ALC/MMEP, stated that MIL-C-82594 specification was written in 1971 by Naval Sea Systems Command with only the Army Munitions Command expressing interest. The document has not been maintained or updated to accommodate changes in air pollution regulations since 1971. WR-ALC/MMEP has no specific information on a commercial product for which the specification may have been prepared, but suspects that the target product may have been similar to "Rustoleum", which would not be applicable or compatible with the urethane coatings and other aerospace finishes introduced since 1971. Inspection of performance requirements indicates salt spray exposure results are poor, and WR-ALC/MMEP does not consider MIL-C-82594 viable for U.S. Air Force use.

Mr. Richard Kinzie, WR-ALC/MMEP, noted that MIL-C-82594 from Coricone Corp. appeared to be nothing more than a resin dissolved in a toluene/xylene mixture. As a clear paint or primer, performance is expected to be poor. As a CPC it should perform better than many other thin film materials such as MIL-C-81309 and possibly better than MIL-C-85054. However, MIL-C-82594 has a high solvent content and could pose a peeling problem if applied to any significant thickness. The only protection provided is via the film forming ability, and would definitely be inferior to a clear polyurethane.

Mr Calvin Moore, OC-ALC/MMEOM, stated that MIL-C-82594 may still have applicability to bare anodized or AlClad surfaces. (Note previous CPAB AI87-28: CPC testing on panels in salt fog, MIL-C-82594 was recommended for bare panels such as LE skins) (continued)

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-01

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

12 March 1990 (continued):

OC-ALC/MMKRA contact with 3M representative revealed that a new tape, similar to tape proposed for USAF LE skin change-out, would not yellow as proposed tape would, thus painting would not be required for appearance purposes. A limited test of tape on the LE will be performed to verify adhesion properties, application procedures, as soon as the tape is available. Once application procedures and adhesion properties are verified, finalized procedures will be included in T.O. 1E-3A-23.

Based on comments from WR-ALC/MMEP regarding MIL-C-82594, no further actions will be considered for using this CPC/Surface Sealer on the leading edge skins.

July 1990:

L.E. tape samples has not yet received by MMKRA.

NAEWF E-3A Component reported that the Dinitrol AV40 applied on the wing leading edges eroded after 220 flying hours.

Mr. Richard Elmslie from Boeing commented that the TS-3 had no corrosion on the upper wing due to regular washings and touchups.

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-10

ORIGINATOR

SUBJECT: Change of Magnesium Parts to Another Alloy

BACKGROUND DATA:

PART NUMBER: 65-18961, 65-18963, 65-18424, 65-18962
NSN:
DRAWING(S):

NAME: Vince Foster
ORGANIZATION: OC-ALC/MMKRA
TELEPHONE: (405) 736-3660
DATE SUBMITTED: May 1988

TO(S): 1E-3A-23
FIGURE: Table 13-4
INDEX: 1 and 17
WORK UNIT CODE:

PROBLEM: Exterior magnesium parts continue to corrode excessively. Boeing can't provide accurate cost estimates for changing these parts to aluminum until firm qty. is established. The number of man-hours being expended to correct mag. corrosion may justify the cost of retooling for production of aluminum parts.

RECOMMENDED ACTION: Users shall provide letter documentation to OC-ALC/MMKRA listing the number of man-hours spent reworking flapperettes and leading edge slats, and provide estimated future spares requirements. Provide other justification data for manufacturing aluminum parts vs. magnesium.
(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

11 Oct 1988:

552d AWACW tracks all corrosion rework accomplished on magnesium parts with maintenance analysis. Work unit codes for magnesium parts are being tracked by computer and recalled and printed every quarter.

Nov 1988:

Engineering services task is being prepared requiring the manufacturer to supply cost estimates for changing the following E-3 magnesium parts to a corrosion resistant alloy (not necessarily aluminum): a) LE slats, b) Fillet Flap Flaperettes, c) MLG Gear Doors, and d) LE Torque Tube Castings.

15 Nov 1988:

OC-ALC/MABE formed Process Action Team (PAT) to determine optimum process for treating the AZ91C magnesium alloy on the E-3.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
NAEW E-3 Comp/MMKRA	Josef Deckers / Vince Foster	Sept 1989

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-10

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

15 Nov 1988 (continued):

Several tests were performed on magnesium panels and on E-3 aircraft as they cycled through depot. Optimum results were attained by removing corrosion from magnesium by mechanically sanding with 240 grit sandpaper, cleaning the part with methyl ethyl ketone (MEK), and applying Dow 19 conversion coating per T.O. 1-1-2. Use of the pickling compound required by T.O. 1-1-2 prior to applying the conversion coating resulted in turning the magnesium a dark black color. Rinsing the magnesium parts with water resulted in oxidation and discoloration of the metal.

552d AWACW and NAEWF/E-3A Component provided manhours spent reworking leading edge slats and flaperettes. From Nov 87 to Sep 88, the Component spent 97.5 hours reworking the flaperettes in the corrosion shop, and 59.6 hours working flaperettes in the R&R shop, a total of 157.1 hrs. 6 flaperettes were reworked. 552d AWACW spent 98.1 corrosion hours reworking flaperettes from July 87 to June 88, on 10 aircraft. The Component spent 89.3 corrosion shop hours and 24 R&R shop hours (113.3 total) reworking LE slats from Nov 87 to Sep 88. 2 slats were removed for shop maintenance. The 552d spent 589.2 corrosion hours reworking LE slats from July 87 to June 88. 552d data does not include hours spent restoring primer and topcoat, and R&R shop hours were not available for these items.

April 1989:

An Engineering Services Task is being processed to Boeing. The task will provide cost estimates for changing magnesium parts to a less corrosion resistant material.

May 1989:

Mr. Dick Kinzie, WR-ALC/MMEP, contacted a magnesium vendor who offered to do some limited tests on chemical corrosion treatments on some E-3 magnesium parts.

16 Nov 1989:

WR-ALC/MMEP will provide test results to OC-ALC/MMKRA of chemical treatment testing of leading edge slat by Magnesium Electron.

(continued)

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-10

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

12 March 1990:

Mr. Richard Kinzie, WR-ALC/MMEP, cannot have test performed by Magnesium Electron (a British company) on the LE slat as planned. Regulations interpreted by WR-ALC/FDPO (Foreign Disclosure Policy Office) regarding release of information to foreign nationals prevents "non-scripted" meetings necessary for testing to take place. WR-ALC/FDPO has cited to Mr. Kinzie that all material presented to foreign nationals in meetings must be reviewed for disclosure.

Engineering Services Task 89-E3B2-15, cost estimate for changing magnesium parts to aluminum, has been completed by Boeing and is being reviewed by OC-ALC/MMKRA. Basic cost analysis is being performed by OC-ALC/MMKRA to determine the next course of action, if any, prior to presenting task report for review by NATO and RSAF.

Mr. Tom Walker, OC-ALC/MAQCP, will provide further information regarding chemical corrosion treatment testing on magnesium slats to OC-ALC/MMKRA. It was noted that previous changes to tech data eliminating the use of the chromic acid pickle solution for corrosion removal and replacing the process with a mechanical corrosion removal process was the correct action.

July 1990:

The new magnesium alloy AZ91E was suggested to be more corrosion resistant than the old mag. and aluminum. Tom Walker commented that AZ91E is more pure than other alloys. AZ91C has no restriction on iron content. More data can be obtained from MME. It was also noted that AZ91E is being used in the automotive industry, but Mr. Richard Elmslie, Boeing, cited reservations due to aircraft industry inexperience with this new alloy.

Mr. Elmslie commented that more problems arose changing mag to aluminum than was expected. Due to corrosion problems, LE slat and flaperette were more viable options for changing.

MMKRA noted that the mag parts in question would probably require re-procurement within the aircraft lifetime, and retooling would be necessary anyway. Thus any additional expenditure would be for drawing/Tech Order changes for aluminum replacements. If replaced with AZ91E, only drawing changes would be required. Any material

(continued)

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-10

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

changes would also require engineering analysis to ensure structural integrity.

Item manager reported to MMKR that remaining aluminum door gates are available as of June 1990.

BOEING

1. **Shipset prices of aluminum castings.**

P/N	S/S QTY	18 S/S	34 S/S	52 S/S	65 S/S
Landing Gear Doors					
5-96376	2	$19,353	$35,082	$52,777	$57,223
65-5644-1	1	81,782	100,720	122,027	137,414
65-5644-2	1	81,782	100,720	122,027	137,414
65-5794-1	1	55,770	86,558	117,251	142,777
65-5794-2	1	55,770	86,558	117,251	142,777
65-6157-1	1	13,900	21,084	28,486	34,589
65-6157-2	1	13,900	21,084	28,486	34,589
65-6159-3	1	35,133	53,337	71,536	86,649
65-6159-4	1	35,133	53,337	71,536	86,649
Totals		$392,523	$558,480	$731,377	$860,081
Wing Leading Edge Slats					
65-18193-1	1	$61,186	$94,683	$129,707	$157,781
65-18193-2	1	61,186	94,683	129,707	157,781
65-18194-3	6	325,801	502,666	712,548	886,219
65-18195-5	1	81,395	144,637	213,683	260,750
65-18195-6	1	61,395	144,637	213,683	260,750
65-18470-1	8	629,179	1,172,366	1,773,673	2,177,570
65-18471-1	1	81,679	145,174	214,503	261,776
65-18471-2	1	81,679	145,174	214,503	261,776
Totals		$1,383,500	$2,444,020	$3,602,007	$4,424,403
Fillet Flap Flaperettes					
65-19178-3	1	$68,097	$107,136	$147,245	$179,798
65-19178-4	1	68,097	107,136	147,245	179,798
Totals		$136,194	$214,272	$294,490	$359,596
Leading Edge Torque Tubes					
65-32239-1	1	$146,589	$167,330	$189,193	$206,289
65-32239-2	1	$146,589	$167,330	$189,193	$206,289
65-32241-1	1	$146,589	$167,330	$189,193	$206,289
65-32241-2	1	$146,589	$167,330	$189,193	$206,289
65-32243-1	1	$146,589	$167,330	$189,193	$206,289
65-32243-2	1	$146,589	$167,330	$189,193	$206,289
Totals		$879,534	$1,003,980	$1,135,158	$1,237,734
Shipset Totals		$2,791,751	$4,220,752	$5,763,032	$6,881,814

2. **Change engineering drawings to use aluminum alloy castings.**

   2,518 HOURS X $113.53/HOUR = $285,869

3. **Evaluate the feasibility of eliminating the countersink fastener holes on the posterior side of the leading edge slat casting and changing the current countersink fasteners to protruding hex head bolts.**

   458 HOURS X $113.53/HOUR = $51,997

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-12

ORIGINATOR

SUBJECT: Emergency Exit Lghts

BACKGROUND DATA:

PART NUMBER:

NSN:
DRAWING(S): 204-56168, 30-0431/-0432

NAME: HFw Franz-Josef Deckers
ORGANIZATION: NAEWF E-3A Comp
TELEPHONE: 01-49-2451-63-2451
DATE SUBMITTED: May 1988

TO(S): 1E-3A-4-33-1
FIGURE: 33-02-07
INDEX:
WORK UNIT CODE: 44A00

PROBLEM: Emergency exit lights located by the emergency exits above the wings collect moisture and subsequently corrode. A drain hole exists, but tends to clog up and prevent drainage.

RECOMMENDED ACTION: Investigate corrosion/drainage in the emergency exit lights and implement a solution.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

26 Aug 1988:

TCTO is being issued to inspect/remove corrosion in light housing assemblies per existing T.O. procedures and notify OC-ALC/MMKRA of any damage beyond T.O. limits. The TCTO also includes instructions to fill all the space in the housing below the drain with MIL-S-81733, smoothing out the sealant to slope toward the drain. MIL-C-85054 will then be applied to the inside of the light housing prior to light reinstallation, and apply MIL-L-87177 to the socket and base of the light bulb. T.O. 1E-3A-6 inspections will be changed to require disassembly to inspect for standing water and apply CPC.

12 March 1990:

Action Item previously closed August 1988 when MMKRTA directed by MMKRA to develop TCTO. No TCTO has been issued. Action Item reopened to track TCTO development, and will remain open until TCTO is published.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
OC-ALC/MMKRA/MMKRTA	Clark Nowlin/Wilburn Mitchell	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

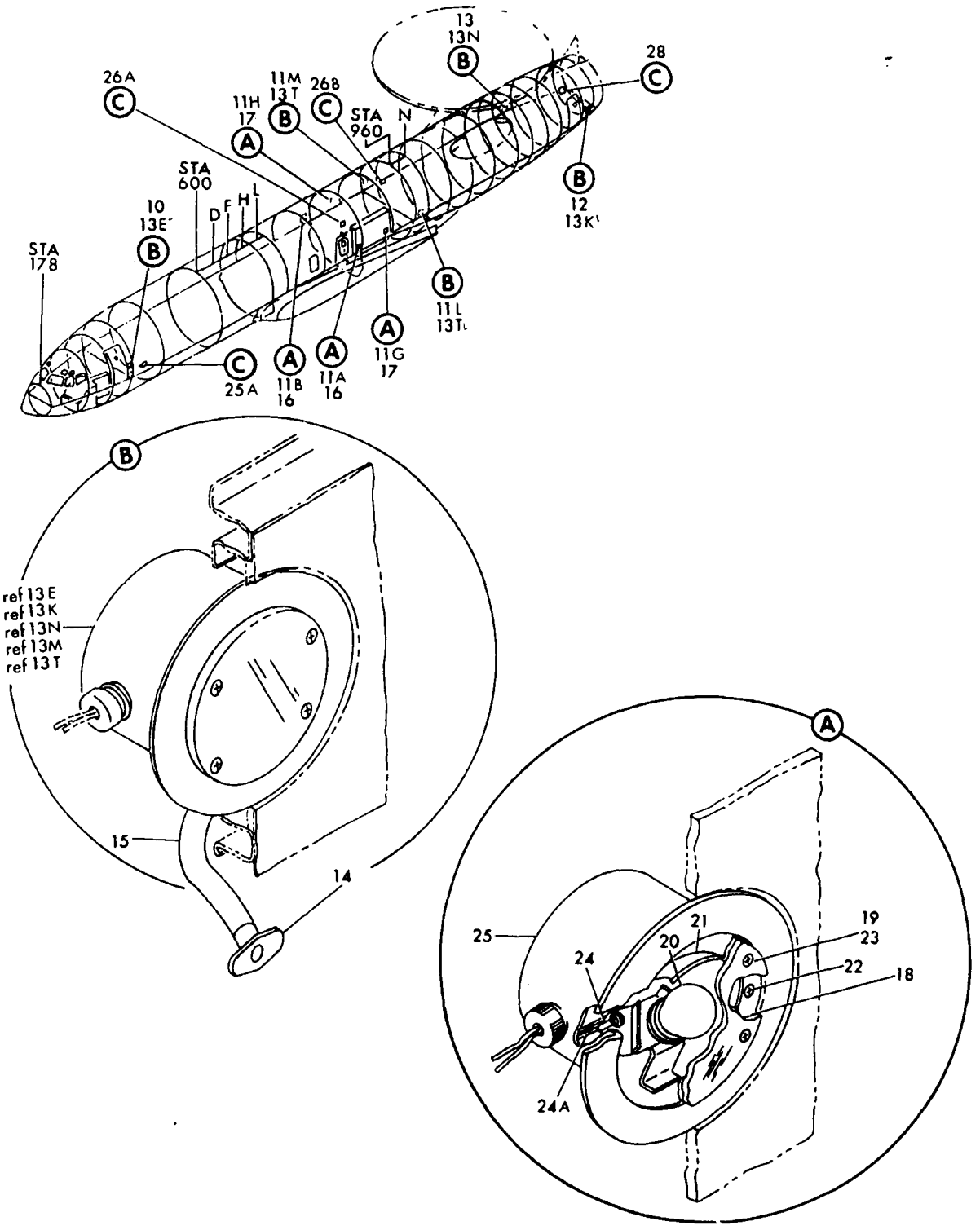
E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-12

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

July 1990:
TCTO has already been written by MMKRTA but currently on hold for parts. Kitproof is also on hold. Reflector assy, P/N 31-1560-1 is unavailable at this time.



SEE NOTE ON PARTS LIST PAGES

FIGURE 7. LIGHT INSTL, EXTERIOR EMERGENCY EXIT
POWER SUPPLY INSTL, EXTERIOR EMERGENCY EXIT (SHEET 1)

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-13

ORIGINATOR

SUBJECT: Rudder Control Rod

NAME: HFw Franz-Josef Deckers
ORGANIZATION: NAEWF E-3 Comp.
TELEPHONE: 01-49-2451-63-6215
DATE SUBMITTED: May 1988

BACKGROUND DATA:

PART NUMBER: 69-14346-2, 69-14345-3

NSN:
DRAWING(S):

TO(S): 1E-3A-4-27-1
FIGURE: 27-09-014A
INDEX: 33
WORK UNIT CODE: 14ACA

PROBLEM: After removing the rod end bearings, NATO workers drained as much as one liter of water out of rudder control rod.

RECOMMENDED ACTION: Identify proper drain hole configuration for the rudder control rod.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:
9 SEPT 1988:
The rudder control rod is made from 2024 T3 aluminum and was designed to be a closed system.Drain hole configuration is attached

MMKRA will write an Engineering Change Order (ECO) against the drawing and issue a TCTO to ensure drain holes and interior finishes are added to the rudder control rods.

15 NOV 1988:
WR-ALC/MMEP cautioned against drilling such a small drain hole. Boeing will provide justification for the .15 +/- .01 inch hole recommended. Stress considerations may require limiting the size of the drain hole. WR-ALC recommended the minimum hole size as .25 inches.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
OC-ALC/MMKRA	Vince Foster	Oct 1989

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-13

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

May 1989:
Boeing stress authorized drilling a .25 inch drain hole in the rudder control rod.

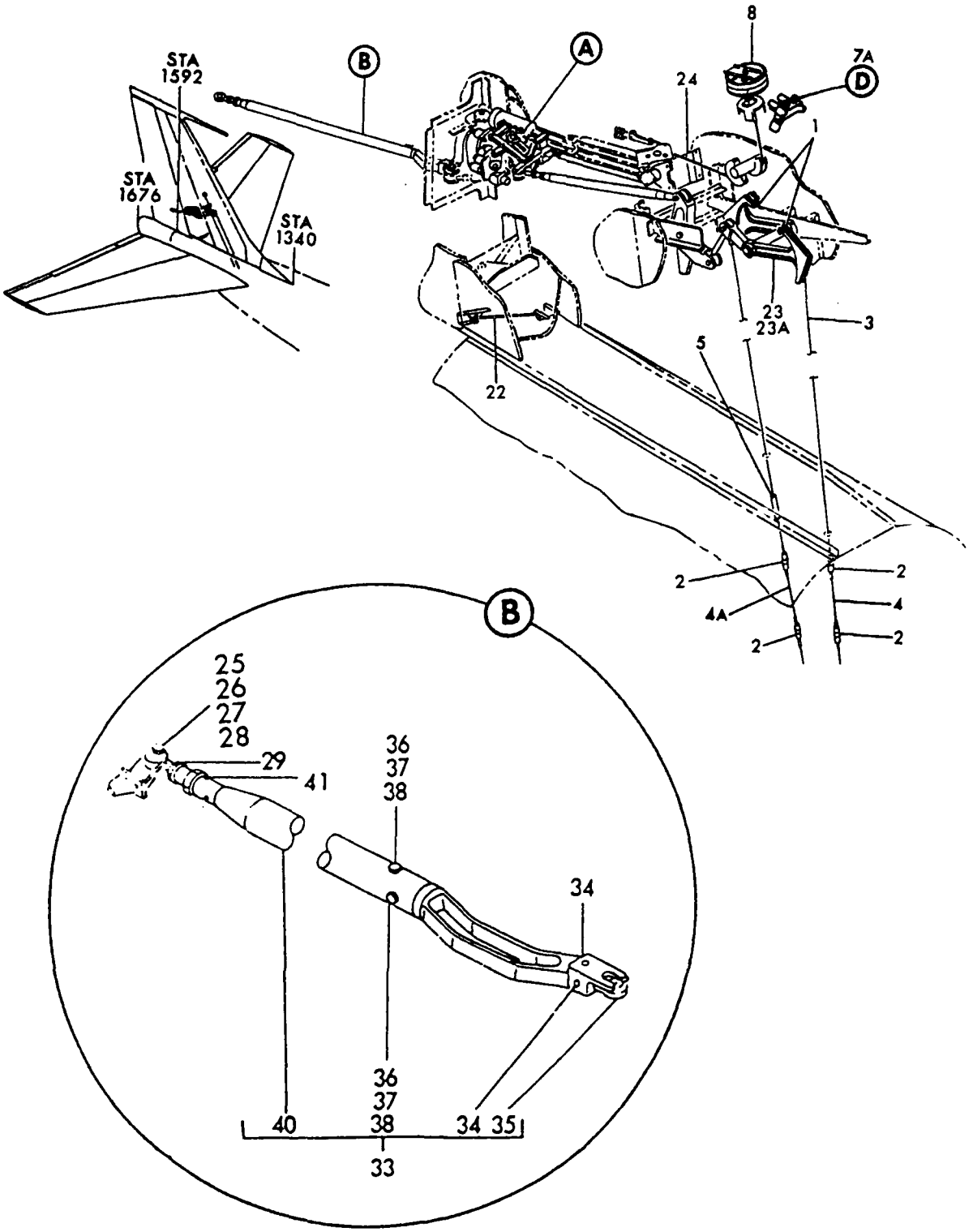
An engineering change order (ECO) is being made to the Air Force drawing. After the drawing is changed, a TCTO will be issued to clean and finish the interior of the rudder control rods, and drill the drain hole.

16 Nov 1989:
Action Item will remain open pending approval of AFLC Form 252 for TCTO.

12 March 1990:
AFLC Form 252 for TCTO has not been completed. Required materials for complete cleaning and corrosion inspection of the rudder control rod has not been readily identified as anticipated.

TCTO will require 552 AWACW/NAEWF E-3A Component/RSAF personnel inspect rudder control rods during phase, drill holes for drainage, and change out for rework if corrosion is detected inside the control rod.

June 1990:
TCTO has been completed and will be published soon. During kit proof, hole was too large and drilled completely through part. TCTO revised to reduce hole diameter to 3/16" and only drill lower side of rod. It was also discovered that attach hardware was loose, corroded, or missing. MMKRA will request all users initiate a one time inspection at O/I for corroded, missing, or loose hardware, and replace if necessary.



SEE NOTE ON PARTS LIST PAGES
FIGURE 14A. CONTROL INSTL, RUDDER (SHEET 1)

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-16

ORIGINATOR

SUBJECT: E-3 Wingtip and HF Antenna Corrosion

BACKGROUND DATA:

PART NUMBER:

NSN:

DRAWING(S):

NAME: HFw Franz-Josef Deckers
ORGANIZATION: NAEWF E-3 Comp.
TELEPHONE: 01-49-2451-63-6215
DATE SUBMITTED: May 1988

TO(S):
FIGURE:
INDEX:
WORK UNIT CODE:

PROBLEM: NATO discovered severe corrosion on HF antennas located in the E-3 wingtips as well as corrosion on wingtip structure. Water remains trapped in the wingtips after washing. Adding more drain holes in this area may help.

RECOMMENDED ACTION: Identify manufacturing processes and materials and configuration of HF antennas located in E-3 wingtips. Identify possible solutions to inhibit corrosion.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

1 July 1988:

Boeing is issuing a service letter regarding corrosion on the baseplate of the antenna coupler. Material changes were made to the HF antenna but did not affect the lightning arrestor or coupler. Adding drain holes may help the problem. The lightning arrestor base is copper alloy C36000 with silver plate per MIL-SPEC QQ-S-365, Type II, Grade A with a thickness of .0001 - .00015.

9 Sept 1988:

Boeing reports that there have been reported instances of some corrosion build up in the interface/junction between the lightning arrestor and the coupler. The judicious use of Dow Corning DC-4 grease applied to the connector seal ring as well as to the mounting base of the coupler acts to exclude moisture and, therefore, reduces corrosion potential. This however is not a new approach and is described in T.O. 1E-3A-3-1.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
BOEING,OC-ALC/MMKRA	Richard Elmslie, Vince Foster	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-16

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

Note that DC-4 is one of the two silicone compounds shown on the QPL of MIL-S-6880.

The use of polyethylene foam jacket used on the outer surface of the arrestor was introduced 6-7 years ago. This provided an additional moisture barrier directly in contact with the sides of the arrestor. This, however, has no bearing on any corrosion problems associated with the coupler/arrestor interface.

15 Nov 1988:

NAEWF/E-3A Component representative Freddie Cuthbert presented pictures and further documentation of the NATO corrosion problem in this area. He helped inspect a USAF aircraft after a flight, and found minor corrosion, but a lot of condensation. The entire area was wet, including the surrounding foam.

OC-ALC/MMKRA will take responsibility for installing another drain hole to allow condensation to drain and allow more air to circulate in to the area, and to change tech data to require a more frequent inspection of the wingtip antenna. Boeing will investigate the possibility of treating the foam with a material to keep it from absorbing water.

March 1989:

OC-ALC/MMKR observed severly corroded lightening arrestors, and couplers on both wingtip antennas on E-3 aircraft 78-0578 during a phase inspection. Water was not found in the panel, but water marks were visible on the right wing panel where the drain hole is located. Fasteners were corroded on the panel perimeter. Foam around the lightening arrestors was soaking wet on both wingtips.

April 1989:

Boeing was unable to define any other measures to inhibit moisture accumulation in the foam. A redesign to eliminate condensation and provide better corrosion protection is beyond the scope of this task, and will require an engineering services task.

23 May 1989:

MMKRA took an action item to coordinate an Engineering Services Task and Statement of Work with BOEING for a redesign of the foam area.

(continued)

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-16

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

Nov 1989:
No action has been taken yet by MMKRA regarding drain hole installation with sealant for leveling, or with changing the interval of inspection for the area. CPC will be applied during phase inspections. Actions will be completed by MMKRA prior to next CPAB.

Boeing is preparing a SOW for an EST to provide tooling and procedures for eliminating the water from the foam cells and injecting grease into the foam, thus displacing any water.

16 Nov 1989:
OC-ALC/MMKRA will ensure that EST includes task to provide repairs for cracked foam cells.

12 March 1990:
OC-ALC/MMKRA is making changes to install drain hole and prepare appropriate drawing/tech order changes. EST 90-E3B2-13, Development of Tools/Procedures to Prevent Corrosion in HF Wingtip Antenna, has been prepared and the necessary paperwork is being processed to put task on contract. OC-ALC/MMKRA is coordinating a separate Statement of Work for a potential EST to investigate/provide repair procedures for cracking in the foam.

June 1990:
OC-ALC/MMKRA is generating TCTO to drill drain hole and add leveling compound. TCTO will be finished by next CPAB.
Mr. Richard Elmslie from Boeing reported that EST 90-E3B2-13 has been started. Boeing will take action to investigate the need of foam surrounding HF antenna.

Reported foam cracking was investigated by MMKRA and found not to be a significant problem. EST would require an exhibit, which is unavailable. No EST will be pursued, and any future problems will be corrected on a case-by-case basis.

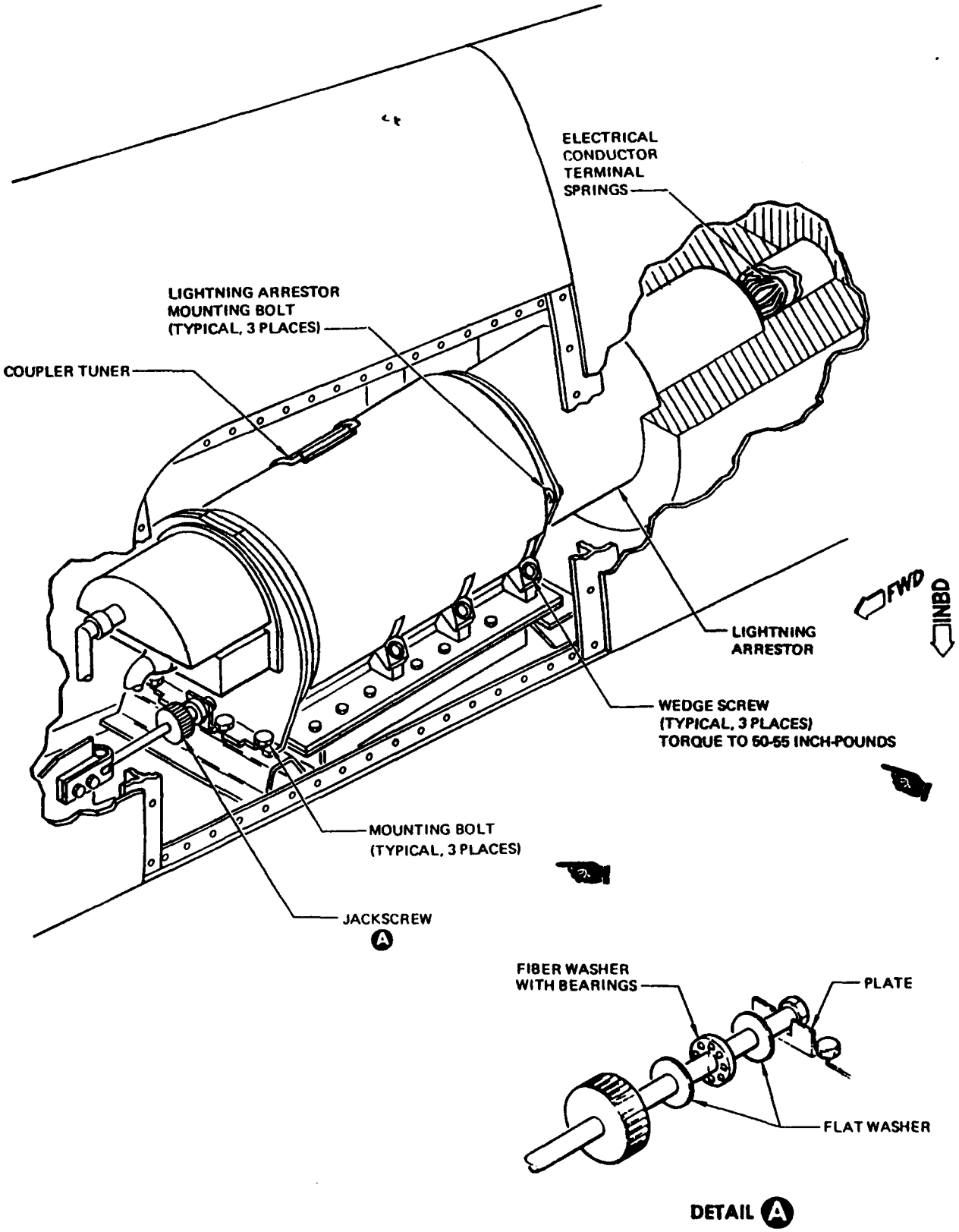


Figure 10-21. HF Transmit Components Installation, Wing Tip

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-18

ORIGINATOR

SUBJECT: Main Landing Gear Drag Strut/Shock Strut Bolt Corrosion.

NAME: John Zylkowski
ORGANIZATION: NAEWF/FCL-TCD
TELEPHONE: 01-32-6544-4694
DATE SUBMITTED: May 1988

BACKGROUND DATA:

PART NUMBER: 66-03943

NSN:
DRAWING(S):

TO(S): 1E-3A-23
FIGURE: 5-3
INDEX: 10
WORK UNIT CODE: 13DD0

PROBLEM: The bolt connecting the MLG drag strut and shock strut corrodes. It is in a critical area and must be protected.

RECOMMENDED ACTION: Identify and implement solutions to inhibit corrosion in this area.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

1 Jun 1988:
NATO is removing corrosion and installing new bolts with MIL-S-81733 sealant.

Sept 1988:
Removing corrosion and installing bolts with sealant should solve the problem, provided bolt removal does not require excessive force during future inspections. After procedure verification, T.O. 1E-3A-2-32-1 will be updated to reflect the use of sealant instead of grease.

15 NOV 1988:
NATO will apply DINOL AV-5 penetrating CPC to some bolts and compare them with the bolts installed wet with MIL-S-81733. Sealant is wiped off of the bolts during installation due to the tight fit. NATO will report results at the next CPAB meeting.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
MMKRA/E-3A Comp.	Jon Kimmel / J. Deckers	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-18

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

23 May 1989:
MIL-S-81733 works better than MIL-S-8802, however bolts are still difficult to remove. DINOL AV5 was applied in Dec 88 and Mar 89, and bolts were more easily removed than before, yet bolts were still not easily removed. It was suggested that a product used by European commercial airlines called MASTINOX (See AI 89-04) be tried.

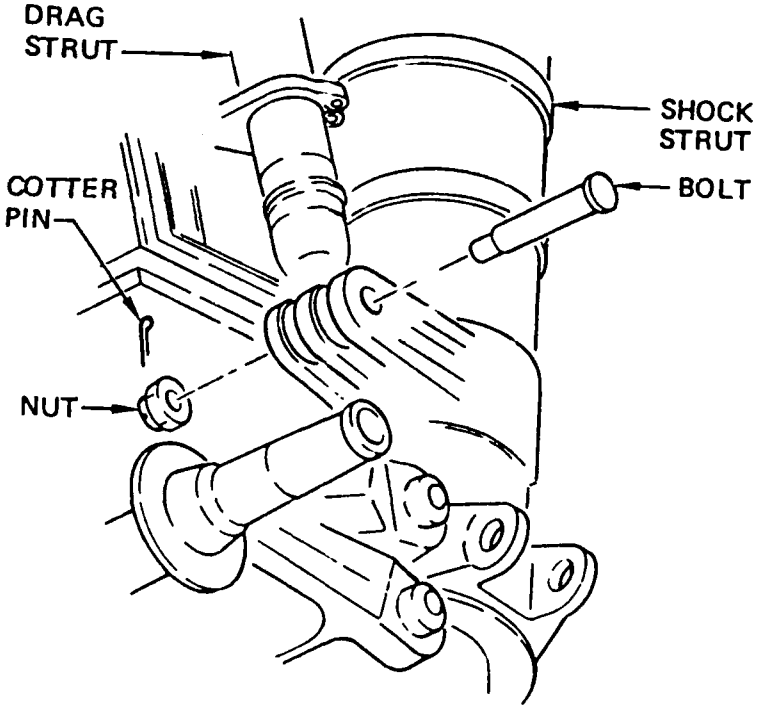
NAEWFC E-3 Component will apply Mastinox to the landing gear bolts and report results when they are available.

16 Nov 1989:
NAEWF E-3A Component applied MASTINOX to A/C 79-0446 while currently in depot. Results will be reported at March 1990 CPAB.

12 March 1990:
No results available from NAEWF E-3A Component.

July 1990:
NAEWF E-3A Component has no results because it only has been approximately one year since the application of MASTINOX to landing gear bolts.

E-3 LANDING GEAR
DRAG STRUT/ SHOCK STRUT BOLT



E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-25

ORIGINATOR

SUBJECT: Elevator Thrust Hinge Access Panel

BACKGROUND DATA:

PART NUMBER: Panels 7231-03, 8231-03

NSN:
DRAWING(S):

NAME: HFw Franz-Josef Deckers
ORGANIZATION: NAEWF E-3A Comp
TELEPHONE: 01-49-2451-63-6215
DATE SUBMITTED: May 1988

TO(S): 1E-3A-23
FIGURE: 3-6
INDEX:
WORK UNIT CODE: 11FDL, 11FGN

PROBLEM: Standing water in this panel is a problem.

RECOMMENDED ACTION: Initiate action to provide drain holes in the elevator thrust hinge access panels.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

2 Sept 1988:

A TCTO is being issued to drill a 0.30 inch diameter drain hole on the lower surface access panels (7231-03 and 8231-03) 3 inches inboard of the existing inboard drain hole and on the same centerline of both existing drain holes. MIL-S-81733 is then applied to channel water toward the new drain hole. ECO being issued to change configuration on drawings.

12 March 1990:

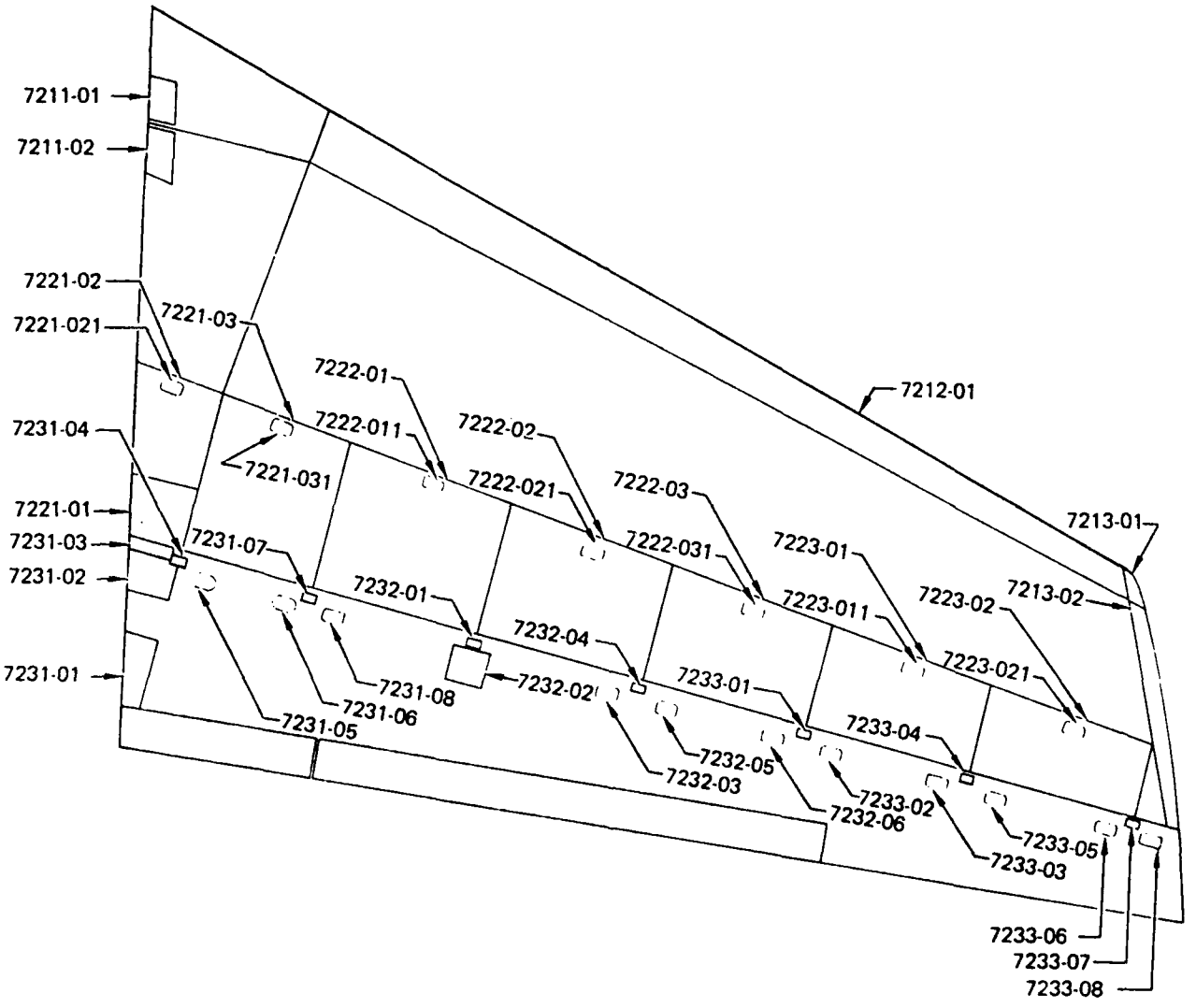
Action Item originally closed Sept 1988 after ECO prepared and MMKRTA tasked to draft TCTO. No action has been taken regarding issue of TCTO. Action Item reopened at March 1990 CPAB due to lack of TCTO. OC-ALC/MMKRA/MMKRTA will ensure TCTO is completed as necessary.

July 1990:

TCTO will not be generated due to the forging of the material. MMKRTA will develop ACI procedures to apply CPC, and add a leveling compound. Fasteners prohibit drilling of drain hole.

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
OC-ALC/MMKRA/MMKRTA	Clark Nowlin/Wilburn Mitchell	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:



L.H. SIDE LOWER SURFACE

Figure 3-6 Stabilizer and Elevator Access Panels (Sheet 1 of 8)

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-26

ORIGINATOR

SUBJECT: COMM/NAV Cabinet Bonding Pad Corrosion

BACKGROUND DATA:

PART NUMBER: 204-56442-62,-66,-67,-68
204-56001-84 THRU -92
NSN:
DRAWING(S):

NAME: Vince Foster
ORGANIZATION: OC-ALC/MMKRA
TELEPHONE: (405) 736-3660
DATE SUBMITTED: 15 NOV 1988

TO(S):
FIGURE:
INDEX:
WORK UNIT CODE:

PROBLEM: Bonding pads located between the cabinets and the floor panels are corroding. The pads are tin plated 2024-T3 AL and provide a grounding path for the cabinets and the equipment in the cabinets. Problem was identified on the E8, E10, and E12 cabinets during Block 20/25.

RECOMMENDED ACTION: Identify other methods of grounding or another material less likely to corrode. Implement a depot level TCTO to change the parts, or determine proper inspection interval when cabinets can be removed and parts replaced.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

April 1989:

Boeing recommends that the corroded bonding pads and straps (where applicable) be replaced with chemically treated (MIL-C-5541, Class 3) 6061-T6 bare aluminum.

MMKRA will develop inspection procedures/intervals/ and instructions for changing the bonding pads during programmed depot maintenance. Changeout may be accomplished IAW the ESM mod.

May 1989:

MMKRB will ensure that T.O.'s include an electrical conductivity check that will verify proper cabinet bonding.

552nd AWACW will identify other areas where electrical bonding may be degraded. These areas should be checked for electrical conductivity.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
MMKRA/MMKRB/552d	Foster/Kelch/MSgt Albright	Aug 1989

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-26

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

Nov 1989:

MMKRA will add requirements to the FY93 USAF Work Specification requiring conductivity checks on the problem cabinet bonding pads. A PDM will be established in the FY93-94 time frame in coordination with Block 30/35 modifications to change the material. The use of conductive sealant will be investigated thoroughly.

MMKRA has discovered that other cabinet mounting bolts are also corroding.

12 March 1990:

OC-ALC/MMKRB has provided OC-ALC/MMKRA procedures for ensuring proper conductivity in the cabinet bonding. OC-ALC/MMKRA will coordinate with OC-ALC/MMKRTB to ensure procedures are placed in the appropriate Tech Orders.

A USAF/NATO PDM task to begin FY93, in conjunction with ESM mod, is being prepared to replace the cabinet bonding pads.

OC-ALC/MMKRA will investigate the problem of cabinet mounting bolt corrosion and provide solution(s).

July 1990:

OC-ALC/MMKRB is adding bonding check procedures to the appropriate Tech Orders. SOW has not yet provided by MMKRA.

MSGT. Ray Albright, 552nd AWACW, commented that all cabinets will have to be checked during maintenance. Boeing will take action to check for corrosion on TS-3 cabinets.

Bonding checks can be done at O/I or Depot, with corrective actions being taken on a case-by-case basis during ACI/PDM if possible. It was also noted that changes can be made during HAVE QUICK A-NET modification.

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-28

ORIGINATOR

SUBJECT: Aerogloss dry wash/ polishing compound

BACKGROUND DATA:

PART NUMBER:

NSN:
DRAWING(S):

NAME: Vince Foster
ORGANIZATION: OC-ALC/MMKRA
TELEPHONE: (405) 736-3660
DATE SUBMITTED: 15 Nov 1988

TO(S):
FIGURE:
INDEX:
WORK UNIT CODE:

PROBLEM: Water quality and quantity prohibit washing aircraft in some locations. Environmental agencies regulate the amount of solvents and contaminants. Washing aircraft with water can trap cleaners and water in non-accessed areas and create more corrosion problems.

RECOMMENDED ACTION: Investigate Aerogloss dry wash /polishing compound and determine its applicability to the E-3 fleet.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

Sept 1988:

Boeing does not have enough experience or information to endorse this product.

Nov 1988:

MMKRA recommended 552d AWACW users tour the Entex aviation facility at Dallas, TX and watch them use aerogloss on commercial aircraft. MMKRA will submit samples to AFWAL for testing. Testing will include chemical breakdown, hydrogen embrittlement testing, and capton wiring resistance tests.

May 1989:

AFWAL did not provide an official answer on their position on using the Aerogloss product. Samples were submitted for testing. MMKR and 552d AWACW/MA observed Evergreen Aviation applying aerogloss to their freight aircraft at Tinker AFB, OK.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
MMEO,AFWAL,MMKRA	D. Tanner/F. Meyer/Lt. Kihle	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-28

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

May 1989:
Evergreen's application procedures were simple and efficient. The product cleaned all dirt and grime off of the aircraft surfaces - including the belly and landing gear - very easily. Areas with dirt, grease, or exhaust on them required two or three applications of Aerogloss, but they still came clean. OC-ALC is attempting to stocklist the product. After Aerogloss is stocklisted, it will be added to T.O. 1E-3A-23 as an option to wet washing. This may solve some problems in areas where water is not available.

E-3A Component applied Aerogloss by hand with cheesecloth to several engine cowlings but they were unable to remove heavy dirt or fingerprints. Aerogloss was then applied to engine cowlings after the aircraft received a wash. One month after applying the Aerogloss, the cowlings were cleaned again and the accumulated dirt was easily removed.

OC-ALC/MMEO will perform more Aerogloss testing. Tests will include determining whether or not chlorides are removed, the ability to touch up paint after using Aerogloss, and the affect heat has on application procedures.

Sept 1989:
OC-ALC/MMEO tested Aerogloss on painted panels. Panels were put in a salt fog cabinet for 2 weeks then removed and allowed to dry. Aerogloss was applied to the panel and a chloride test performed. No chlorides were indicated on the panel after applying Aerogloss.

Oct 1989:
OC-ALC/MMKRA and 552 AWACW/MAEBC applied Aeroglosss to the top RHS of the vertical fin in T/N 81-0005. MAEBC then painted the squadron stripes on the fin. 552nd AWACW is monitoring the area to determine if the Aerogloss is affecting paint adherence.

OC-ALC/MABPCB will test Aerogloss on the fuselage and wings to determine its affects on adherence.

Nov 1989:
Stocklisting action not yet complete by OC-ALC/MMKRTA.

(continued)

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-28

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

16 Nov 1989:

WRDC/MLSA provided response to Nov 1988 request for testing. Aerogloss testing revealed the presence of silicone, which WRDC/MLSA indicated would cause paint to lack adherence when painted over the Aerogloss. WRDC/MLSA experience similar adherence problems with other weapon systems painting over compounds containing silicone.

OC-ALC/MMKRA will provide a formalized Statement of Work for the application of Aerogloss.

OC-ALC/MMKRA will coordinate another test of paint adherence over Aerogloss, similar to A/C 81-0005. 552 EMS/MAEMBC reported that prior test was faulty due to scuff sanding prior to paint after the application of the Aerogloss.

OC-ALC/MMKRA will coordinate with Evergreen Aviation another demonstration of the Aerogloss use. Attendees will include personnel from 552 AWACW/MAQ, 552 EMS/MAEMBC, OC-ALC/MMEOM/MAQCP/MABPCB/MABEP.

12 March 1990:

Aerogloss was properly applied by MMKRA on a LE flap on 24 Jan 90 after scuff sanding for touch up. Compound was also used to clean the painted RH NLG door. No result of testing yet. No further testing are foreseen as required on a larger scale as previously planned. A Statement of Work for Aerogloss application will not be generated as the procedures will be placed in T.O. 1E-3A-23.

A demonstration by Evergreen Aviation on Aerogloss application has yet to be scheduled.

Aerogloss has been stocklisted under P/N's 903A (5 gal drum), and 902D (55 gal drum). P/N's will be added to T.O. 1E-3A-23, Table 15-1 (Special Consumable Materials).

OC-ALC/MMKRA will investigate feasibility of applying Aerogloss after receiving paint, since it is the optimum beneficial time to apply it. If this is feasible, every other required detergent wash may be changed to a clear water rinse. A/C -1675 or -1407 will have Aerogloss applied after paint as a full test aircraft, if possible.

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-28

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

July 1990:

MMKRA commented that the application of aerogloss as a pre-touchup will not cause paint to lack adhesion. Reports show no indication of hydrogen embrittlement and no adverse effect due to heat on surfaces applied with aerogloss.

MMKRA will take action to check survivability/vulnerability effect from aerogloss.

Nona Larsen, Boeing, requested a copy of the Material Safety Data Sheets (MSDS) for review.

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-29

ORIGINATOR

SUBJECT: Corrosion on Access Doors in Rotodome Hardback

BACKGROUND DATA:

PART NUMBER: 204-20111; 204-20121; 204-20107
NSN:
DRAWING(S):

NAME: Sgt. Luhm
ORGANIZATION: 552d AWACW/MAEB
TELEPHONE: (405)733-3826
DATE SUBMITTED:

TO(S): 1E-3A-23
FIGURE: 13-13A
INDEX: 31,32
WORK UNIT CODE:

PROBLEM: Rotodome hardback access doors have tin plated filler strips mounted to the access doors and the periphery of the structure. Excessive corrosion is reworked and tin strips replaced during phase inspections. These are HCI and are time consuming and costly to repair.

RECOMMENDED ACTION: Investigate design configuration and other related corrosion problems in this area. Recommend alternative materials to replace the tin plating.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:
May 1989:
Boeing evaluated the problem and found the following:
1) Design Configuration (D204-20111): Two differing installations were used on the E-3. Twenty eight aircraft had the access doors installed per 204-20111-1 and -2. Parts made per these dash numbers are tin plated 7075 aluminum frames (204-20107-1 and-2) and fillers (204-20111). Twenty nine aircraft had the access doors installed per 204-20111-31 and -32. Parts made per these dash numbers have cadmimum plated 304 stainless steel fillers. (See Figure 4)

2) Effectivity:
a) The following aircraft have tin plated filler strips:
1. USAF: 71-1407, 71-1408, 73-1675, 75-0556 through 75-0560, 76-1604 through 76-1607, 77-0351through 77-0356, 78-0576 through 78-0578, 79-0001 through 79-0003, 80-0137 and 80-0138.
2. NATO: 79-0442 and 79-0443

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
Boeing/MMKRA	Richard Elmslie/Vince Foster	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-29

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

May 1989 continued:

b. The following aircraft have cadmium plated 304 stainless steel filler strips:

1. USAF: 73-1674, 80-0139, 81-0004, 81-0005, 82-0006, 82-0007 83-0008, and 83-0009.

2. NATO: 79-0444 through 79-0459
3. RSAF: 82-0066 through 82-0070.

3. Repair: The -31 and -32 installations may be repaired per T.O.1E-3A-3-1 Section VII Paragraph 7-12 and Figure 7-9. This procedure may also be used to convert the -1 and -2 installations to the -31 and -32 installations. This will provide better corrosion protection.

May 1989:
NAEWF E-3 Component and 552 AWACW will inspect aircraft with Cad plated stainless steel fillers and report on their condition. If this configuration is not corroding, a TCTO to reconfigure those aircraft with tin plated aluminum to Cad plated stainless steel will be issued. If corrosion is present, MMKRA will take action to resolve corrosion problem. MMKRA will ensure T.O.1E-3A-4-53 annotates proper configuration.

16 Nov 1989:
Users will provide complete inspection results to OC-ALC/MMKRA. OC-ALC/MMKRA will investigate providing a kit for configuration change on A/C 79-0442 and 79-0443 to Cad plated stainless steel.

Boeing reported that the reason for configuration change during production was due to corrosion of the tin plating.

12 March 1990:
552 AWACW has not completed inspections of access doors. MMKRA will coordinate a TCTO with MMKRTA to change tin plated filler strips on USAF and NATO aircraft.

(continued)

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-29

CONTINUATION SHEET

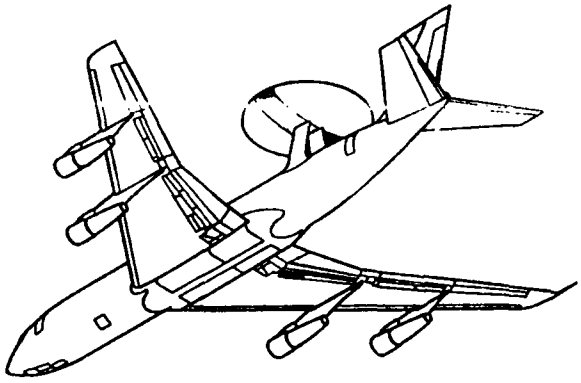
RECOMMENDED ACTION:

STATUS:

July 1990:

The replacement of aircraft with tin plating filler strips will be done by attrition in accordance with T.O. -3-1. 552 AWACW prefer TCTO to be generated because the fillers will corrode eventually. MMKRA will take action to investigate TCTO.

552 AWACW has not inspected cad plated filler strips for corrosion on aircraft noted in May 1989 status.



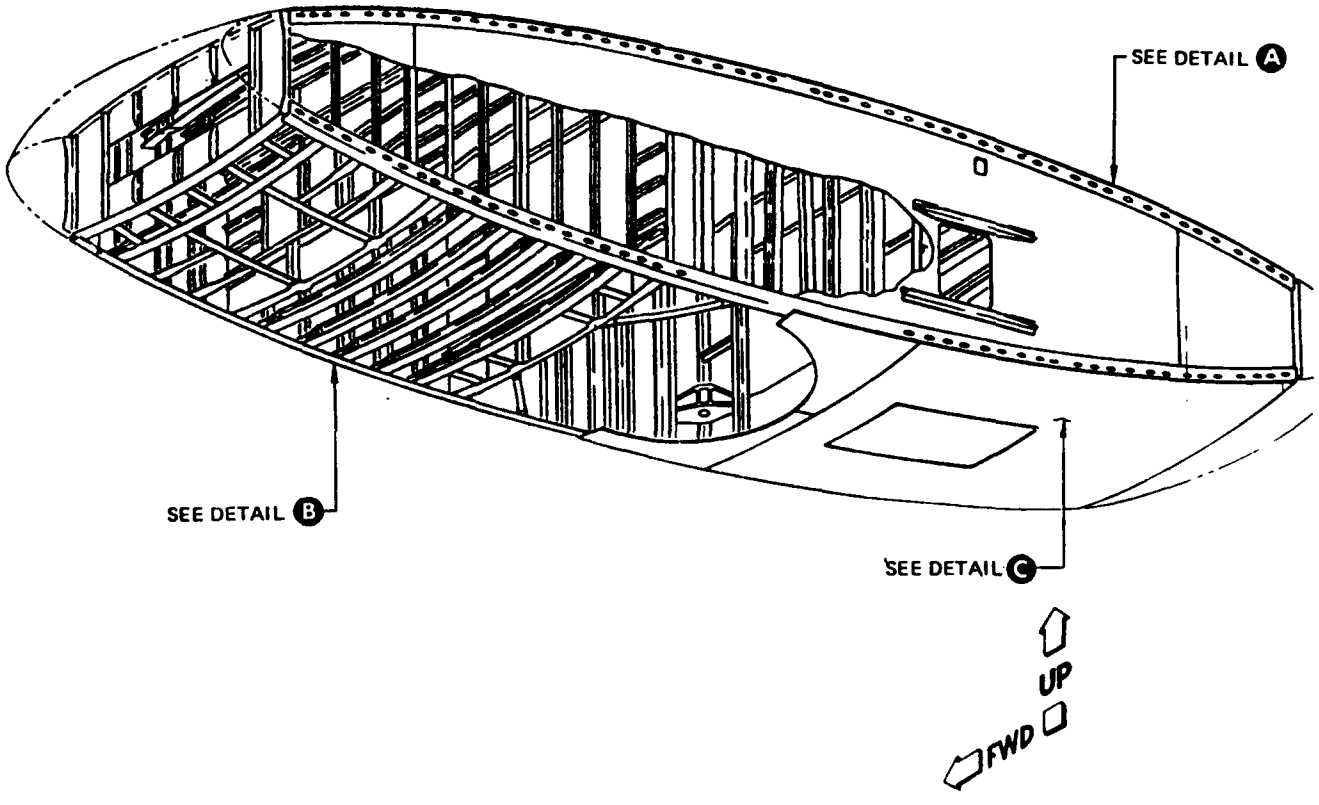
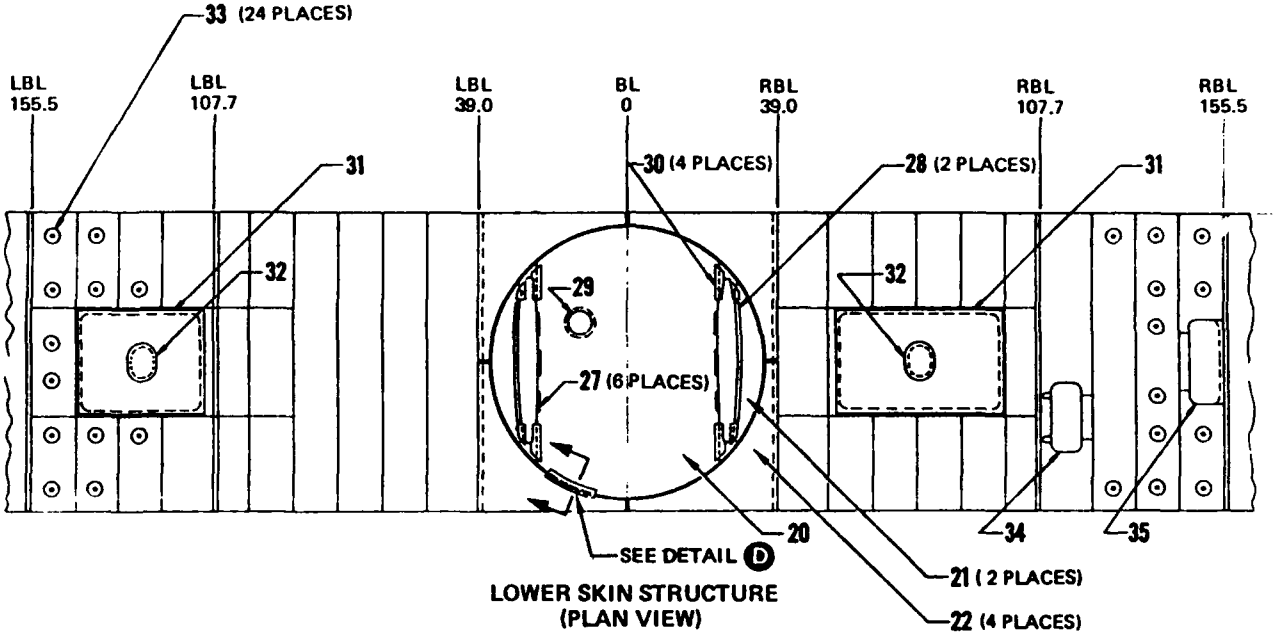


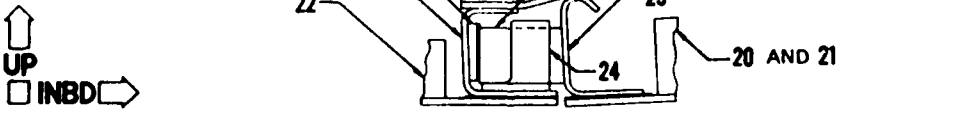
Figure 13-13A. Antenna Pedestal Center Section EMP Structural Finishes [HCI] *(Sheet 1 of 10)*



LOWER SKIN STRUCTURE
(PLAN VIEW)

FWD

DETAIL C



ROTARY SEAL & BRUSH ASSEMBLY
(BRUSHES TYPICAL 28 PLACES)

DETAIL D

Figure 13-13A. Antenna Pedestal Center Section EMP Structural Finishes [HC1] *(Sheet 3 of 10)*

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-30

ORIGINATOR

SUBJECT: Antenna Pedestal Closure Panels/Splice Plates

BACKGROUND DATA:

PART NUMBER: 204-20133

NSN:

DRAWING(S):

NAME: Josef Deckers
ORGANIZATION: NAEWF/Comp/LWMQ
TELEPHONE: 49 2451-63-363
DATE SUBMITTED: 15 NOV 1988

TO(S): 1E-3A-18; 1E-3A-4-93-3
FIGURE: 4-9 ; 7D
INDEX: ; 12 - 17
WORK UNIT CODE:

PROBLEM: Extensive corrosion is found on the tin plated closure panels and splice plates. Moisture migrates into the area and the tin plated parts corrode.

RECOMMENDED ACTION: Evaluate the original design and recommend alternative materials. Determine if problem exists in USAF fleet. Recommend solutions.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:
May 1989:
Boeing evaluated the problem and found the following:

1. Review of Design:
   a. Corners: The four corners consist of bonded aluminum honeycomb panels (204-20133-3, and -4, two each) which are tin plated on the upper surface of the outboard flange (7075 aluminum). These tin plated surfaces are attached to chemically treated 7075 clad aluminum plates. These plates are attached to primed 7075 aluminum fittings (204-20136). See Figures 5 and 6.
   b. Sides: The sides are tin plated 7075 bare aluminum panels (204-20133-2) which are wash primed, primed, and enamelled. These panels are attached to tin plated clad 7075 aluminum fillers (204-20133-23). These fillers are also attached to the primed strongback extrusions at STA 39. See Figures 5 and 6.
2. Repair: See T.O. 1E-3A-3-1, Section VII, Figure 7-3, Detail V for damage allowances after corrosion removal and refinishing.
3. Recommended Solutions:
   a. Corners: Fillers (204-20133-19, -22, -25 and -26)

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
Boeing / MMKRA	Richard Elmslie/Vince Foster	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-30

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

May 1989 continued:

should be replaced if corroded. This would be less costly than removing and retreating/replating. The honeycomb panels (204-20133-3 and -4) should only be replaced if damage allowances are exceeded.

b. Sides: The -2 and -23 fillers may be replaced with chemically treated clad 7075 aluminum. This would eliminate tin plating in the joint and will have the advantage of improving the protection on the exterior surface of the -2 panel by eliminating the wash primer.

The E-3A Component inspected 3 other aircraft during phase:
A/C 79-0450 No corrosion between splice plates and closure panels and closure panels and filler panels.

A/C 79-0445 No corrosion between splice plates and closure panels but light discoloration on the tin plated surfaces of the closure/filler panel.

A/C 79-0459 No corrosion between splice plates and closure panels, but tin plated surface of the closure panels on several places corroded. Filler panels show discoloration.

May 1989:
MMKRA will add rework procedures to the appropriate tech orders. Tech data will be updated to reflect proper configurations and part numbers.

Nov 1989:
No action has been taken by MMKRA to add rework procedures or prepare ECO to change material or dash number. Action will be complete prior to next CPAB.

12 March 1990:
All actions not yet completed by MMKRA. No ECO will be issued to change part numbers. Part number changes done by Boeing only. Tech Orders will be changed to require local fabrication of new parts during rework using chemically treated Clad 7075 aluminum.

(continued)

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-30

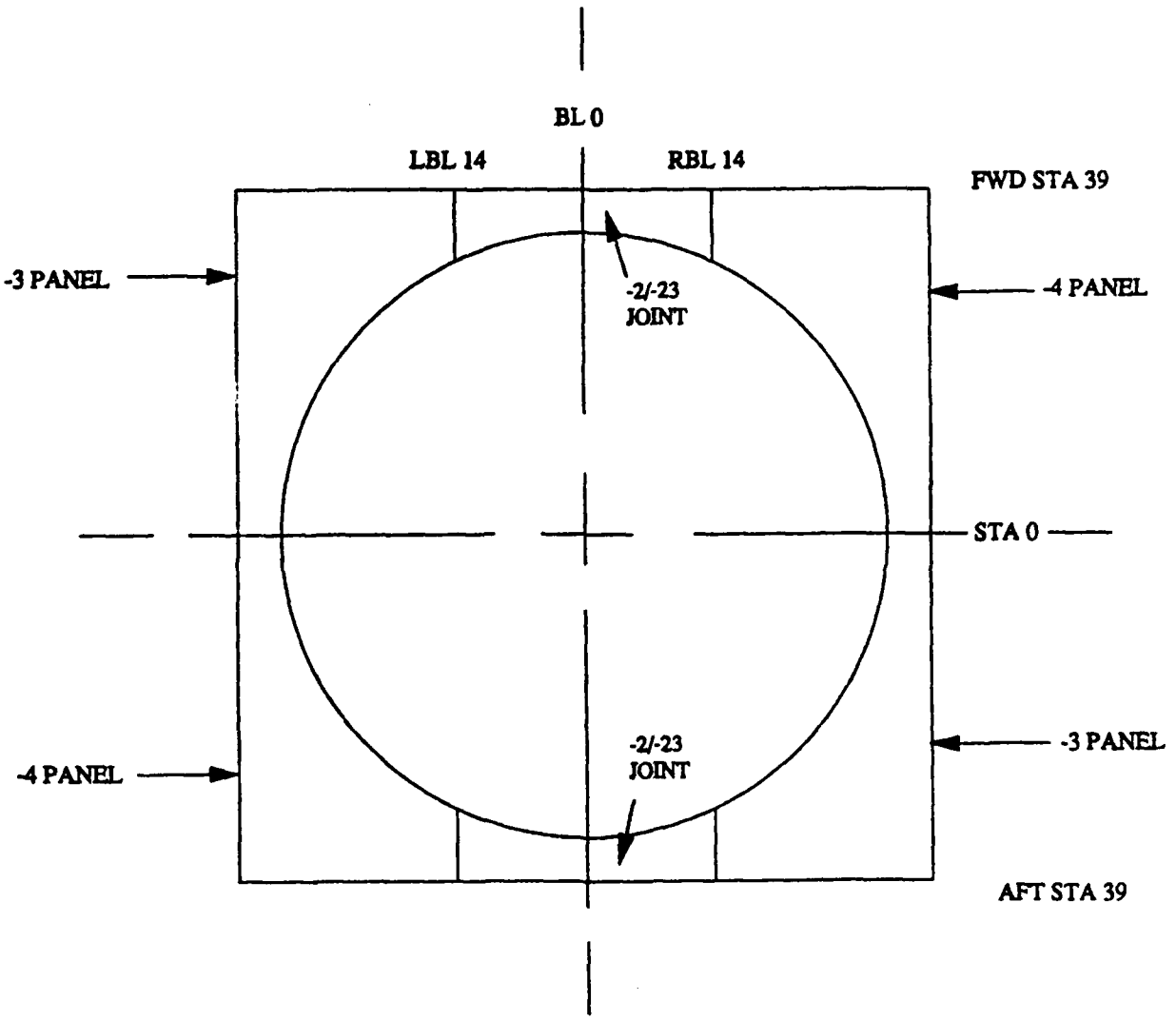
CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

July 1990:
MMKRA will have procedures completed by next CPAB.

ACTION ITEM 88-30



PLAN VIEW
ANTENNA PEDESTAL LOWER SURFACE

FIGURE 5: JOINT LOCATIONS

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-31

ORIGINATOR

SUBJECT: Fillet Flap Flaperette Corrosion

NAME: Josef Deckers
ORGANIZATION: NAEWF/Comp/LWMQ
TELEPHONE: 49 2451-63-363
DATE SUBMITTED: 15 NOV 1988

BACKGROUND DATA:

PART NUMBER: 65-19178

NSN:
DRAWING(S):

TO(S): 1E-3A-23;
FIGURE: 2-5
INDEX: 1
WORK UNIT CODE:

PROBLEM: The brush seal that contacts the upper surface of the flaperette seems to be holding moisture and contaminants and causing corrosion on the upper forward surface of the flaperette.

RECOMMENDED ACTION: Determine purpose and material of the seal, suggest alternatives to the seal and/or determine if better finish requirements are needed to protect the flaperette underneath the seal.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

Jan 1989:
Abrasion resistant teflon coating could be applied to the flaperette to add an additional layer of corrosion protection and chafing protection.

May 1989:
MMKRA will change T.O. 1E-3A-23 to require finishing the flaperette with teflon coating.

BOEING will provide procedures for applying the abrasion resistant teflon coating to the flaperette.

Nov 1989:
Brush seal is made of mohair and is an aerodynamic seal. EST 89-E3B2-13 is a task to Plastic Media Blast (PMB) various magnesium parts. This part is one which will be PMB'd. After blasting, it will be repainted with teflon coating added. At this time procedures for applying the coating will be developed.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
BOEING/MMKRA	Richard Elmslie/Vince Foster	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-31

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

12 March 1990:

NAEWF E-3A Component treated the brush seal area with a LIXTON compound (brushed on) and then applied a teflon coating. So far the teflon coating is not failing to adhere to the surface or wear down.

NAEWF E-3A Component will perform a normal prepaint surface treatment and add teflon coating to test the adhesion and wear characteristics, and will report results at next CPAB.

Once field tests are completed by E-3A Component, OC-ALC/MMKRA will include instructions to apply teflon coating after corrosion rework in T.O. 1E-3A-23, Figure 2-5 Corrosion Inspection Guide.

July 1990:

NAEWF E-3A Comp. reported that A/C -0456, treated with Lixton compound with teflon coating on 30 Nov., is in good condition when inspect on 30 June. Another aircraft treated the same way on 30 Dec. is also currently in good condition. So far, the coating is adhering to the surface with Lixton. A/C -0457 will be similarly treated soon.

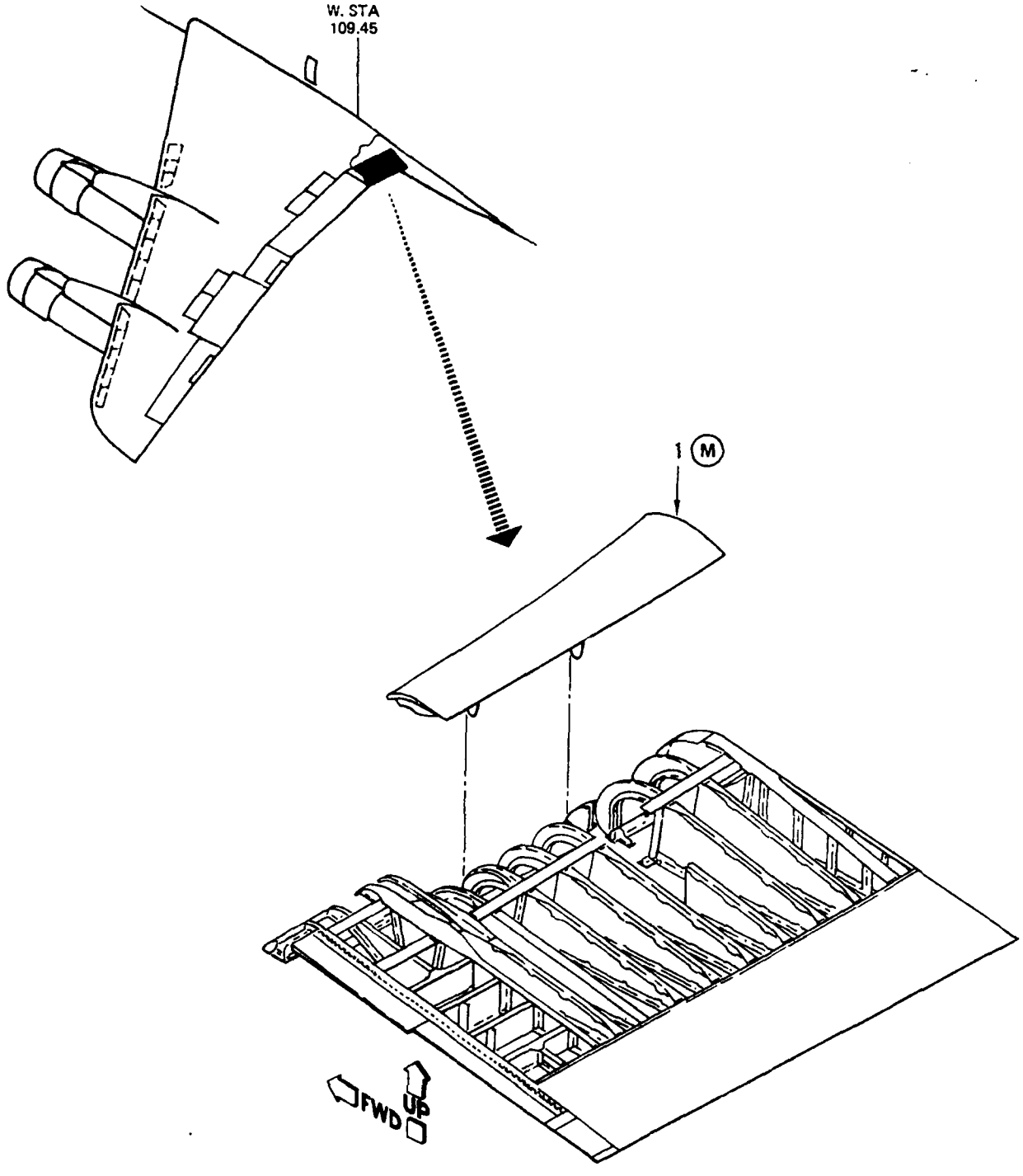


Figure 2-5. Fillet Flap Flaperette Corrosion Inspection Guide (Sheet 1 of 2)

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-32

ORIGINATOR

SUBJECT: Abrasion Resistant Teflon Coating on Faying Surfaces

BACKGROUND DATA:

PART NUMBER: 7-W-27 or 7-X-74

NSN:
DRAWING(S):

NAME: HFw Franz-Josef Deckers
ORGANIZATION: NAEWF E-3 Comp.
TELEPHONE: 01-49-2451-63-6215
DATE SUBMITTED: 15 NOV 1988

TO(S): 1E-3A-23
FIGURE: 13-16 ; para. 13-38
INDEX: entire figure
WORK UNIT CODE:

PROBLEM: Teflon coating is applied on faying surfaces during manufacture to prevent fretting. The areas of application listed in T.O. 1E-3A-23 fig. 13-16 are incomplete. Requirements for inspection and replacement of the teflon coating are non-existant.

RECOMMENDED ACTION: Ensure reapplication requirements are included in tech data, and ensure figure 13-16 is updated to include areas in engine cowlings, nacelles, and fuselage that require teflon coating reapplication.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:
May 1989:
Boeing provided the following drawing list covering chafing protection:
1. 65-23322: Chafing protection of access panel faying surfaces for the inboard and outboard wing.
2. 67-18503: Chafing protection of access panel faying surfaces for the inboard and outboard strut assemblies.
3. 65-23389: Anti-chafing protection of access panel faying surfaces for the vertical tail (rudder) assembly.
4. 65-23388: Anti-chafing protection of access panel faying surfaces for the horizontal tail (elevator) assembly.
5. Anti-chafing protection of access panel faying surfaces on the body is not done because of EMP requirements. If anti-chafing protection was applied to surfaces on the aircraft body, it was applied in error.

An in-depth study of the above listed drawings to compare them to figure 13-16 in T.O. 1E-3A-23 will require an engineering services task.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
Boeing / MMKRA	Richard Elmslie /Vince Foster	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 88-32

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

May 1989:
MMKRA will research 65-18503 and add the areas in the nacelle struts requiring abrasion resistant teflon coating application to T.O. 1E-3A-23. Reapplication requirements will be added to T.O. 1E-3A-3-1 and the ACI work specification.

Nov 1989:
MMKRA is currently preparing changes to the Tech Orders and the ACI/PDM Work Specification package for FY93.

16 Nov 1989:
OC-ALC/MMKRTA will have stocklisting action complete by Feb 1990. Black color is stocklisted already and used by C/KC-135 maintenance personnel at OC-ALC.

12 March 1990:
Black color stocklisted and previously thought as being teflon coating is not. Material used by C/KC-135 is an erosion coating similar to what is used on E-3 radomes. OC-ALC/MMKRTA is preparing T.O. 1E-3A-23, par 13-38 changes in teflon coating application procedures to white on gray and gray on white application, instead of the previous white - white, gray - gray procedure. This change would prevent having to generate new stocklisting action and would provide the color differential as requested.
OC-ALC/MMKRA is preparing Statement of Work for a Boeing EST to fully research the chafing drawings and make T.O. 1E-3A-23 changes to fully conform to the drawings. Teflon coating inspection/application requirements will not be addressed until EST and Tech Order changes are completed.

July 1990:
Statement of work for a Boeing EST has already been submitted by MMKRA. Procedures for application are available in T.O. -23.

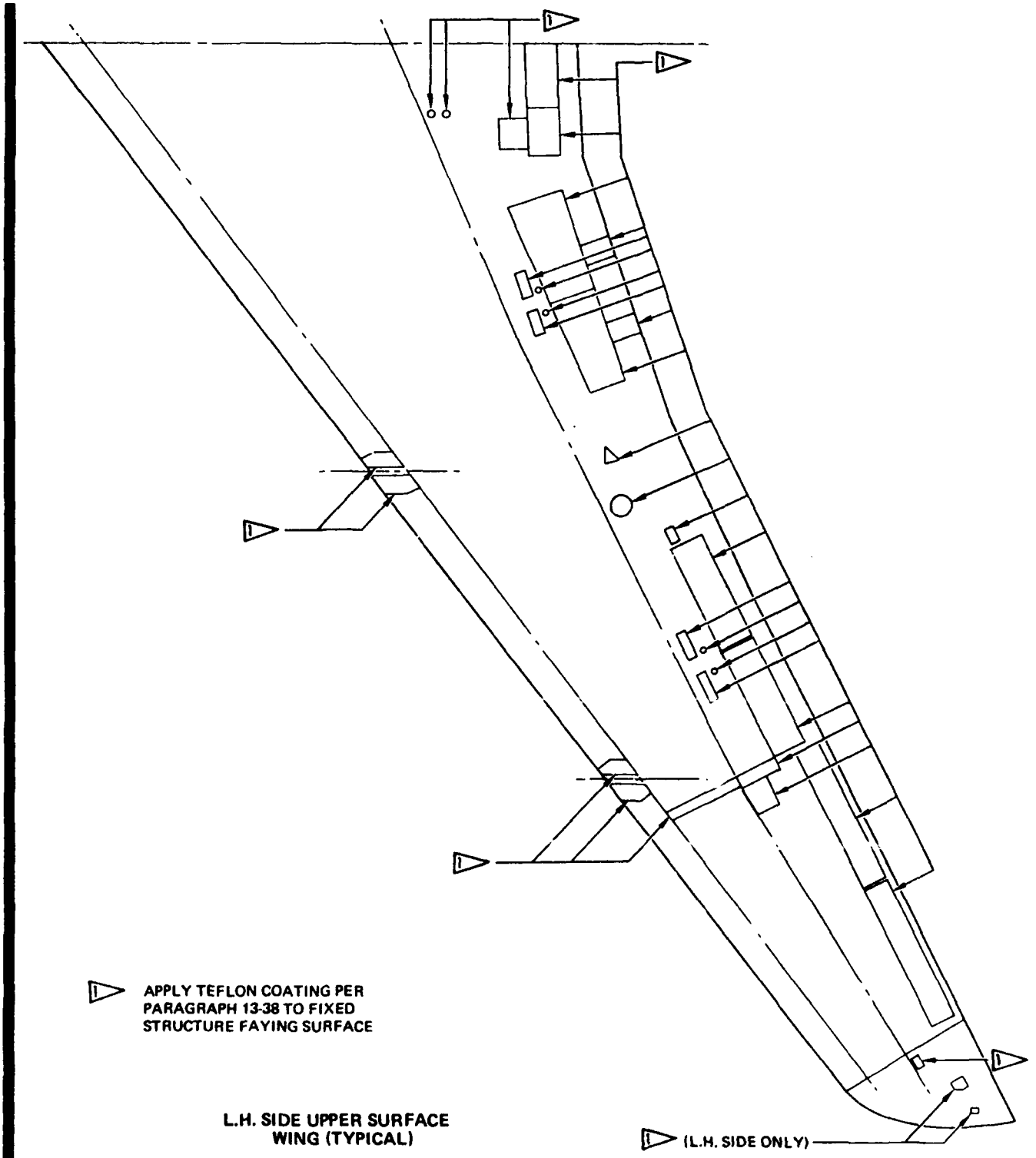


Figure 13-16. Abrasion-Resistant Teflon Coating Locations (Sheet 5 of 6)

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-04

ORIGINATOR

SUBJECT: Use of MASTINOX as an Anti-seize/CPC compound

BACKGROUND DATA:

PART NUMBER: MASTINOX 6856K,H / D40

NSN:
DRAWING(S):

NAME: LEONARDO BRESCACIN
ORGANIZATION: OAN - VENICE
TELEPHONE: 39-41-666856
DATE SUBMITTED: MAY 1989

TO(S):
FIGURE:
INDEX:
WORK UNIT CODE:

PROBLEM: Seized bolts/pins in various areas, and particularly on landing gears during removal, due to corrosion.

RECOMMENDED ACTION: Investigate the use of MASTINOX compound for bolts/pins in critical areas (non lubricated joints) and implement use if product is satisfactory.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

May 1989:
MMEO will perform tests on Mastinox to determine its effectiveness as a CPC. Mastinox literature compares it to MIL-P-8116B.

Sept 1989:
MASTINOX 6856 added as a bushing seal to trunnion support, along with grease and sealant to two other trunnion support bushings. All three bushing were subject to 6 weeks in a salt fog cabinet. After disassembling bushings, no MASTINOX remained and considerable corrosion was present. The same was true for the bushings with grease. The best was the bushing with sealant. Sealant remained and corrosion was minimal.

Nov 1989:
MASTINOX 6856K QPL to BMS 3-27 (Corrosion Inhibiting Material, Nondrying Resin Mix). International Celomer states that MASTINOX 6856K meets or exceeds technological requirments of MIL-P-8116-B, but without asbestos filler.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
OC-ALC/MMKRA	Vince Foster	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-04

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

International Celomer belongs to COURTAULD GROUP, who recently made acquisition of Product Research and Chemical Corporation, Glendale CA. Plans are being made to make product available through that company. International Celomer is now in the process of requesting placement on QPL of MIL SPECs. There are at least 43 users of MASTINOX worldwide, including airlines, aircraft manufacturers, and maintenance facilities.

16 Nov 1989:

OC-ALC/MMEOM will continue testing MASTINOX for use as Anti-seize/ CPC compound. Tests will also be conducted verifying manufacturer claims that product is equivalent to MIL-P-8116B, but without asbestos. OC-ALC/MMEOM will coordinated testing with OC-ALC/MMKRA and, if necessary, with WRDC/MLSA.

OC-ALC/MMKRA will investigate Boeing's use for BMS 3-27.

12 March 1990:

BMS 3-27 is being used on models 727, 737, 747, 757 and 767 for close tolerance landing gear bolts.

OC-ALC/MMEOM is still reviewing information pertaining to MASTINOX and is coordinating with other OC-ALC divisions. OC-ALC/MMKRA has not coordinated a test plan yet with OC-ALC/MMEOM for MASTINOX.

July 1990:

MMKRA requested WRDC/MLSA research/evaluate MASTINOX. WRDC/MLSA briefly responded, preferring MIL-S-81733 over MASTINOX for static joints and pins where lubrication is not necessary. WRDC/MLSA did not respond with any further information. MMKRA will further request WRDC/MLSA test MASTINOX 6856K against MIL-P-8116, and provide details of use as an anti-seize compound.

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-05

ORIGINATOR

SUBJECT: Bleed Air Ducts

BACKGROUND DATA:

PART NUMBER: See parts list in Recommended Action below.
NSN:
DRAWING(S):

NAME: Barry Schnauber
ORGANIZATION: 552EMS/MAEBC
TELEPHONE: (405) 734-3826
DATE SUBMITTED: 23 MAY 1989

TO(S): 1E-3A-4-21-1
FIGURE: 21-01-017
INDEX:
WORK UNIT CODE:

PROBLEM: Corrosion has been found on the wing leading edge bleed air ducts. No rework procedures exist in the Tech Orders.

RECOMMENDED ACTION: Investigate corrosion on bleed air ducts and determine rework procedures for inclusion into Tech Order.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

May 1989:

MMKRA will investigate the problem and coordinate with Boeing to determine implications and solutions.

Nov 1989:

Boeing response: 707 history indicates no reports of corrosion on the ducts. Material used is AISI 321 or 347 CRES tubing per BMS 7-41, condition annealed. In non-severe environments such as those common to the E-3 this stainless steel is inert. Some light rust is to be expected but does not indicate that a corrosion problems exists.

MMKRA will investigate whether an ACI task is appopriate to inspect the LE ducts, or perform an initial one time inspection during USAF LE skin changeout beginning in FY91.

P/N's: 65-7148-9/-10, 65-7147-1/-2, 204-68511-1, 204-68512-1/-2, 204-68513-1/-2, 204-68514-1/-2, 65-20751-1/-2, 65-19879-1/-2, 69-27061-2, and 65-19884-1.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
BOEING / MMKRA	Richard Elmslie/Vince Foster	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-05

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

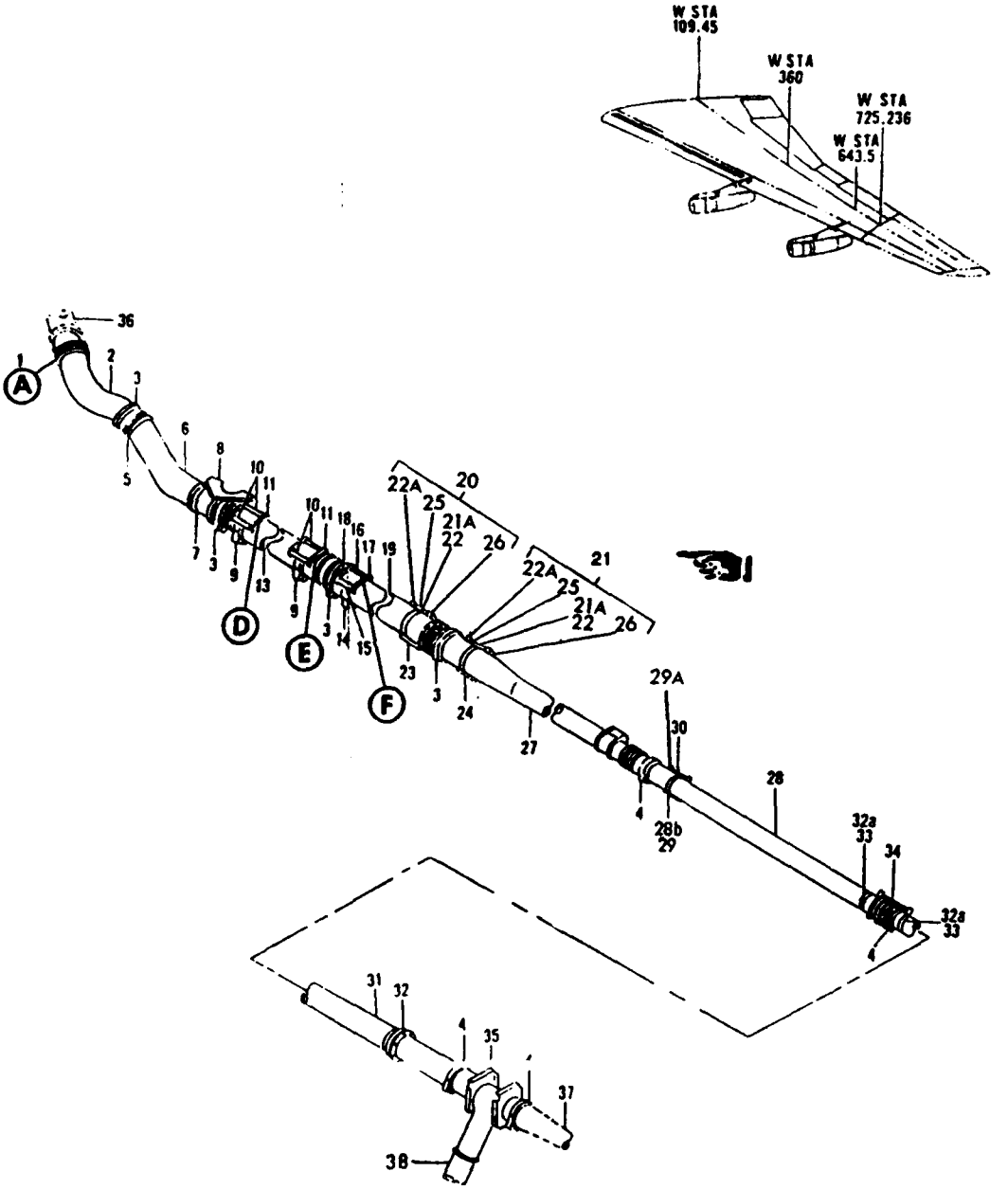
16 Nov 1989:
552 AWACW/MAQ will notify OC-ALC/MMKRA when access is available to inspect a corroded bleed air duct.

12 March 1990:
552 AWACW has not reported any aircraft to OC-ALC/MMKRA with any access to inspect the LE bleed air ducts.

15 March 1990:
552 EMS/MAEMBS reported an aircraft with access to LE bleed air duct. MMKRA investigated and found severe corrosion with a black, reddish color (rust), and pitting on A/C -0354. Three other aircraft in depot were inspected. One appeared to have mild corrosion similar to A/C -0354, but not as bad. The other two aircraft inspected had no visible problems. Significant amounts of corrosion on the two problem aircraft were around the mounting clamps.

July 1990:
Statement of work for L.E. skin will require removal of bleed air ducts. MMKRA will look again at bleed air ducts and replace it as necessary. The diameter for the out-board ducts are .016" and for the in-board ducts are 050". Maximun allowable pitting for out-board and in-board are .002" and .003" respectively. If replacement ducts are not available, MMKRA will generate repair procedures.

NAEWF E-3 Component reported no corrosion found on ducts.



SEE NOTE ON PARTS LIST PAGES
FIGURE 17. DUCT INSTL, WING LEADING EDGE CABIN AIR (SHEET 1)

21-01-17

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-06

ORIGINATOR

SUBJECT: Spacer - Speaker Support, Nose Gear

BACKGROUND DATA:

PART NUMBER: 204-56399

NSN: N/A
DRAWING(S): 204-56399, 204-56353

NAME: TSgt. Charles Faircloth
ORGANIZATION: 961 AWACS/MACM
TELEPHONE:
DATE SUBMITTED: 23 May 1989

TO(S): 1E-3A-4-23
FIGURE: 04-67
INDEX: 09
WORK UNIT CODE:

PROBLEM: Bracket is corroding excessively in an area where there is no apparent cause for corrosion. Parts can not be ordered and are being locally manufactured at Kadena AB.

RECOMMENDED ACTION: Determine cause of corrosion and a method for eliminating/reducing corrosion. Ensure part numbers are stock-listed and provide the necessary tech data for finish requirements.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

May 1989:
MMKRA will identify proper finishes to help protect these parts and attempt to determine the cause of corrosion.

July 1989:
Parts are corroding due to finish degradation. Part is for protection of the nose gear speaker bracket assembly from the tow bar hookup impact/chafing. Due to constant impact on the spacer, it is impractical to require frequent refinishing for corrosion protection. Other protective alternatives are being pursued.

Nov 1989:
MMKRA is investigating whether these parts can be stocklisted. Otherwise, parts can be locally manufactured if necessary. An ECO will be submitted against the drawing requiring an additional teflon coating. Once done, T.O. 1E-3A-23 will be updated to show the additional part requiring a teflon coating.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
OC-ALC/MMKRA	Vince Foster	

STATUS: CLOSED **DATE CLOSED:** JUNE 1990
FINAL DISPOSITION: OC-ALC/MMKRTA has requested stocklisting for the parts.

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-06

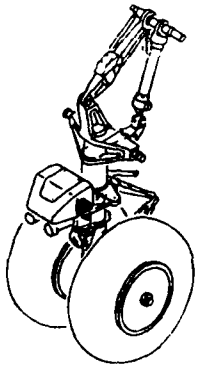
CONTINUATION SHEET

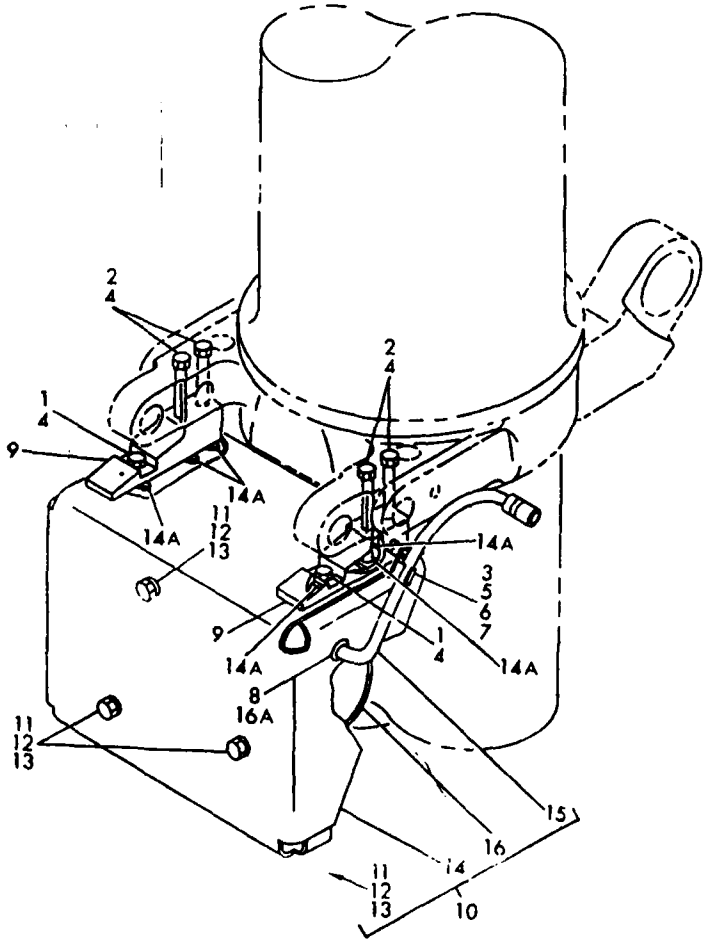
RECOMMENDED ACTION:

STATUS:

12 March 1990:
OC-ALC/MMKRTA is still investigating stocklisting of part. An ECO has been submitted for a teflon coating. No Tech Order change will be made to T.O. 1E-3A-23, Figure 13-16. When part is manufactured locally or bought on a new contract after stocklisting, requirement to have teflon coating will exist in drawing via ECO.

July 1990:
OC-ALC/MMKRTA has already requested stocklisting for the parts. No further action to be taken on this Action Item.





SEE NOTE ON PARTS LIST PAGES
FIGURE 67 SPEAKER INSTL, NOSE GEAR

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-07

ORIGINATOR

SUBJECT: VHF Antenna (#1 & 2) Corrosion

BACKGROUND DATA:

PART NUMBER: 204-14994

NSN:
DRAWING(S): 204-14994

NAME: TSgt. Charles Faircloth
ORGANIZATION: 961 AWACS/MACM
TELEPHONE:
DATE SUBMITTED: 23 May 1989

TO(S): 1E-3A-4-23-01
FIGURE: 13
INDEX: 7
WORK UNIT CODE:

PROBLEM: The #1 and #2 VHF Antennas located on the keel beam between the main landing gear doors are corroding. Corrosion is more severe at the antenna/fuselage interface.

RECOMMENDED ACTION:

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

May 1989:

OC-ALC Depot Maintenance also identified corrosion on these antennas. Rework procedures are being developed and MMKRA will determine what action is necessary to prevent future corrosion on the antennas and on the fuselage skin.

Nov 1989:

SOW developed to repair antennas. Corrosion found on LE and mating surfaces between fuselage and antenna base. Rework requires refinishing, with conductive alodine. MMKRA is investigating the use of conductive sealant as a faying surface seal during rework.

LE corrosion due to paint erosion/lack of erosion tape. Frequent touch-up and application of erosion tape will elimate LE corrosion problems.

16 Nov 1989:

OC-ALC/MMKRA will investigate changing Tech Order to paint leading edge and applying erosion tape.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
OC-ALC/MMKRA	Vince Foster	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-07

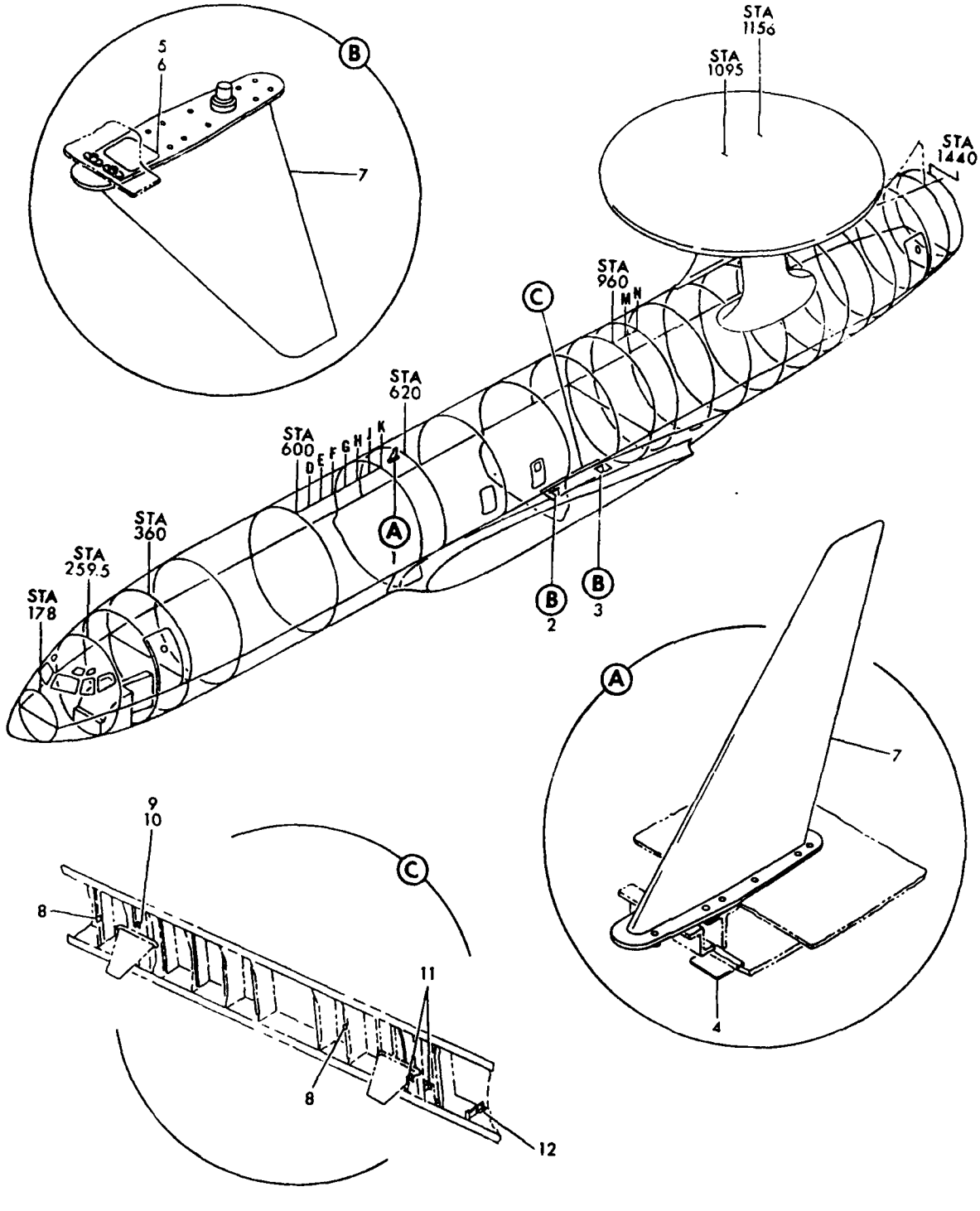
CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

12 March 1990:
OC-ALC/MMKRTB has tentatively approved painting the aluminum leading edges of the antennas and applying LE erosion tape. Once formally approved by MMKRTB in writing, a TCTO will be generated to accomplish painting/tape application, and the Tech Orders will be changed to show the new requirement.

July 1990:
MMKRA is working on statement of work for MMKRTA to generate TCTO. 552 AWACW requested form 252 be issued if SOW is not necessary. MMKRA took action to change T.O. rather than issue TCTO.



SEE NOTE ON PARTS LIST PAGES

FIGURE 13 ANTENNA INSTL, VHF/AM STATION 600L, 844 AND 930 BLAD

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-09

ORIGINATOR

SUBJECT: Nose Landing Gear Door Aft Rib Corrosion

BACKGROUND DATA:

PART NUMBER:

NSN:

DRAWING(S):

NAME: TSgt Charles Faircloth
ORGANIZATION: 961st AWACS
TELEPHONE:
DATE SUBMITTED: May 1989

TO(S):
FIGURE:
INDEX:
WORK UNIT CODE:

PROBLEM: The aft rib in the nose landing gear (NLG) wheel well is collecting water and beginning to corrode.

RECOMMENDED ACTION: Drill a drain hole in the lowest spot and ensure an adequate drain path.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

May 1989:
MMKRA will include procedures for drilling the drain hole in a field level TCTO.

Nov 1989:
MMKRA preparing ECO to document drain hole installation. Once ECO is submitted, MMKRTA will prepare TCTO to add drain hole and leveling compound.

16 Nov 1989:
OC-ALC/MMKRA will submit document(s) to NAEWF E-3 Component illustrating location of rib.

12 March 1990:
Investigation of drawings still being undertaken by MMKRA. TCTO will be prepared once investigation is complete. Location in question will be relayed to E-3A Component as soon as possible.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
OC-ALC/MMKRA	Lt. Jim Kihle	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-09

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

July 1990:

NAEWF E-3A Comp. reported that A/C 0442 through 0453 has no drain hole but sealant. A/C 0454 through 0459 has drain hole but no sealant. MMKRA/552 AWACW will take action to inspect USAF aircraft.

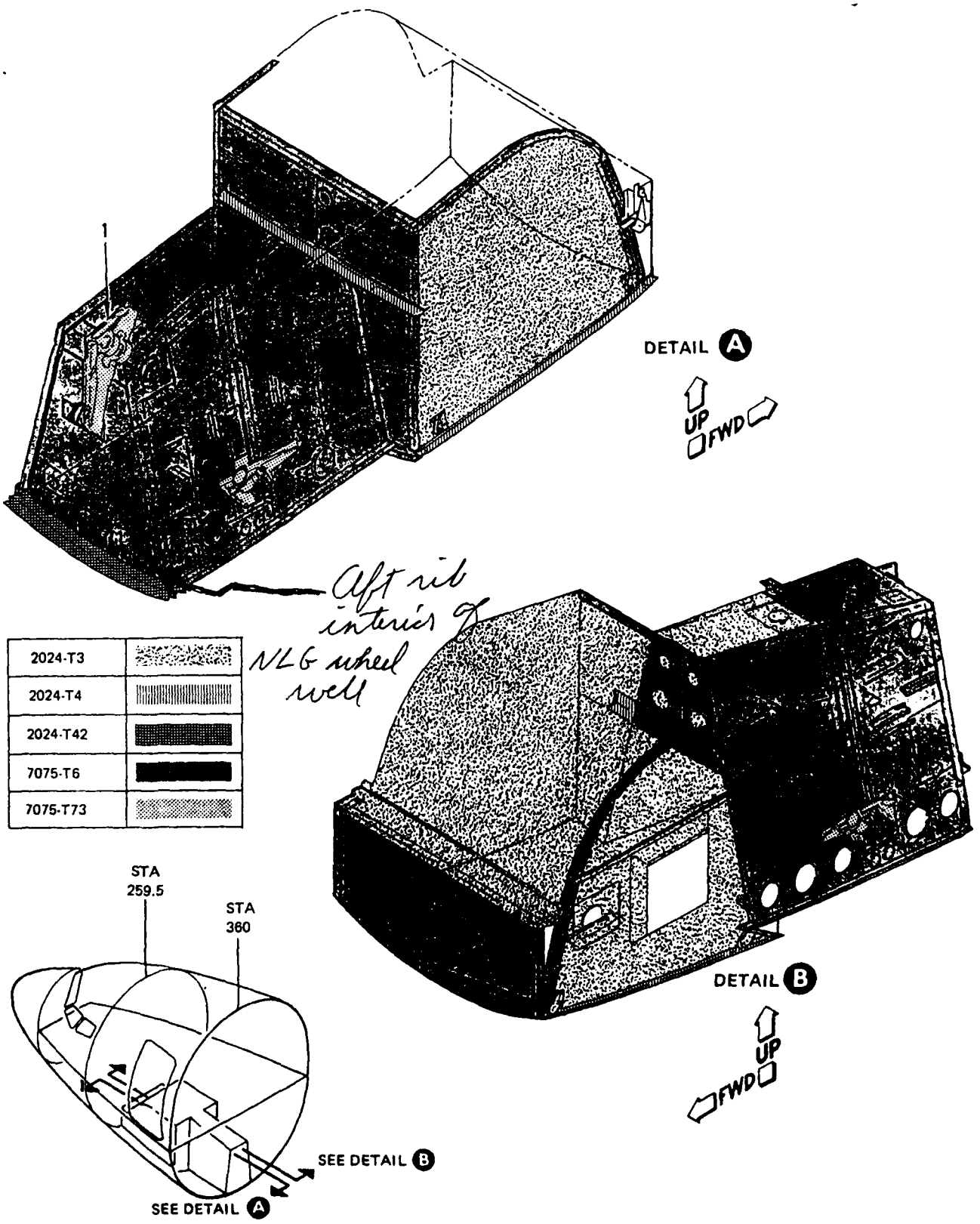


Figure 4-9. First Body Section Nose Gear Wheel Well Corrosion Inspection Guide (Sheet 1 of 2)

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-11

ORIGINATOR

SUBJECT: Inboard Trailing Edge Flap

BACKGROUND DATA:

PART NUMBER: 65-18441-61/-62

NSN:
DRAWING(S):

NAME: HFw Franz-Josef Deckers
ORGANIZATION: NAEWF E-3 Comp.
TELEPHONE: 01-49-2451-63-6215
DATE SUBMITTED: 16 NOV 1989

TO(S): 1E-3A-4-27-1
FIGURE: 27-06-12
INDEX: 23
WORK UNIT CODE:

PROBLEM: Water is collecting in the inboard flap cavity. After removal of cover assy, 65-18441-33, excessive corrosion was found on the rivet nuts on bolt heads, as well as light corrosion on the flap structure. A/C 79-0454 and 79-0449 were inspected and the same condition was discovered.

RECOMMENDED ACTION: Install drain holes in the inboard edge of the lower cover assembly

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

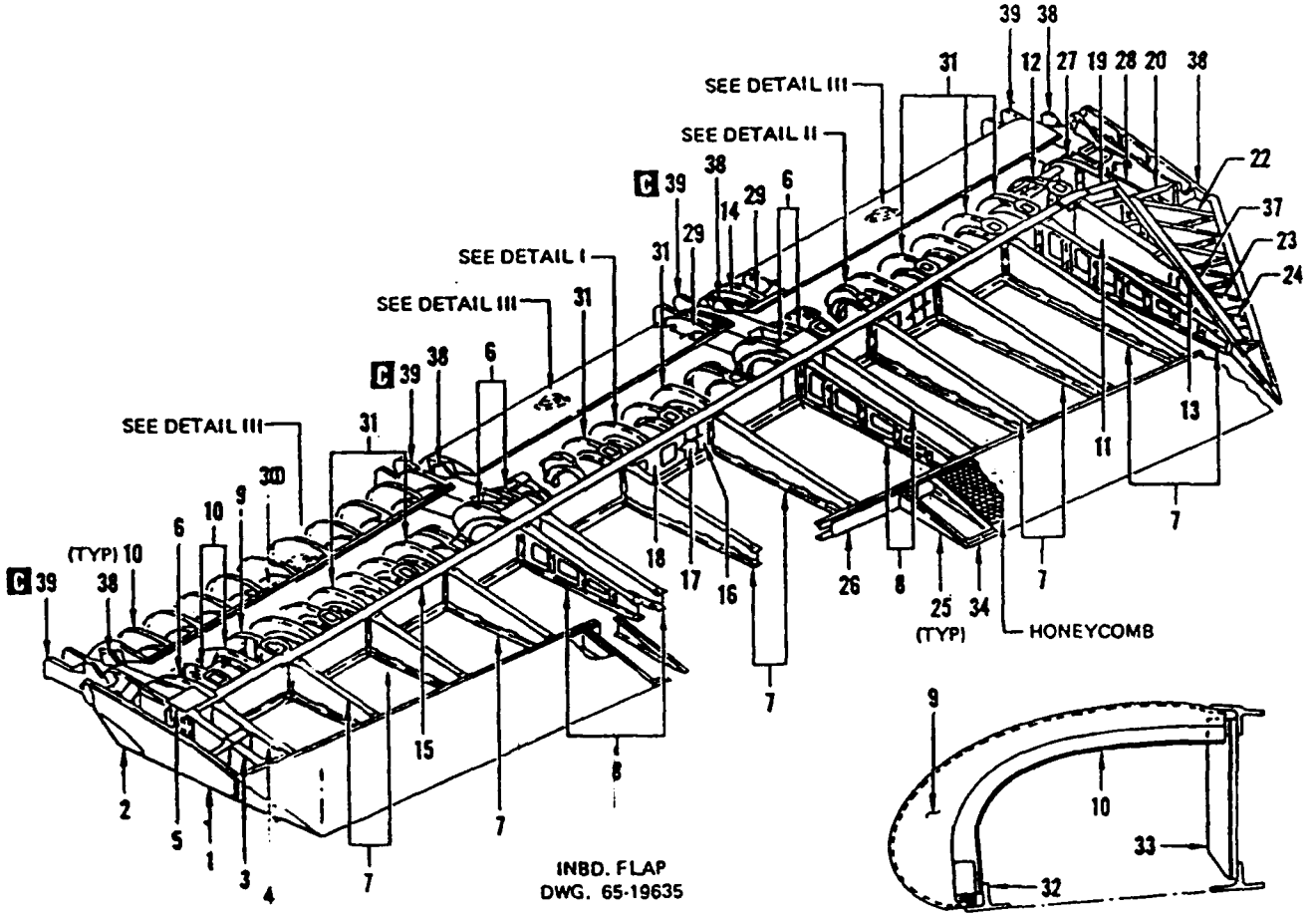
16 Nov 1989:
OC-ALC/MMKRA will investigate, prepare ECO, and coordinate TCTO with OC-ALC/MMKRTA to install drain hole(s) as necessary to correct problem.

12 March 1990:
No action has been taken yet by OC-ALC/MMKRA.

July 1990:
OC-ALC/MMKRTA is generating a TCTO to inspect and install drain hole(s) as necessary. Kitproof/publication scheduled for late Sept 90.

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
OC-ALC/MMKRA	Lt. Jim Kihle	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:



DETAIL I
TYPICAL RIB

NOTE

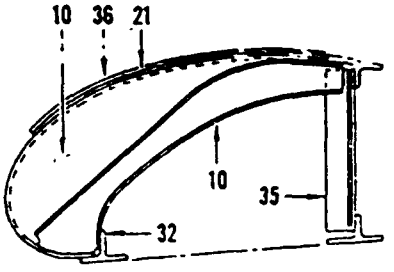
A REPAIR PER FIGURE 10-2 (REPAIR OF WEB BY LAP SPLICE) USE SUM OF BONDED WEB GAGES TO SELECT REPAIR WEB GAGE

B CUP IS FILLED WITH COPPER PLATED STEEL SHOT. REMOVE AND REPLACE CUP AND SHOT IF NECESSARY TO MAKE REPAIR IN THIS AREA.

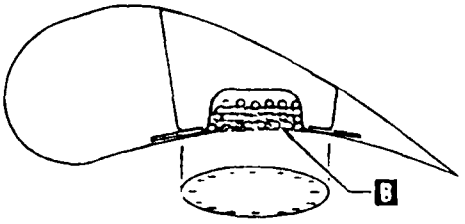
C FOREFLAP TO CARRIAGE ATTACHMENT REPAIR SEE FIGURE 2-66

ALC THIS NOTATION SPECIFIES THAT OKLAHOMA CITY ALC ASSISTANCE IS REQUIRED TO ACCOMPLISH THIS REPAIR

SEE FIGURE 1-168 FOR REPAIR TOOL

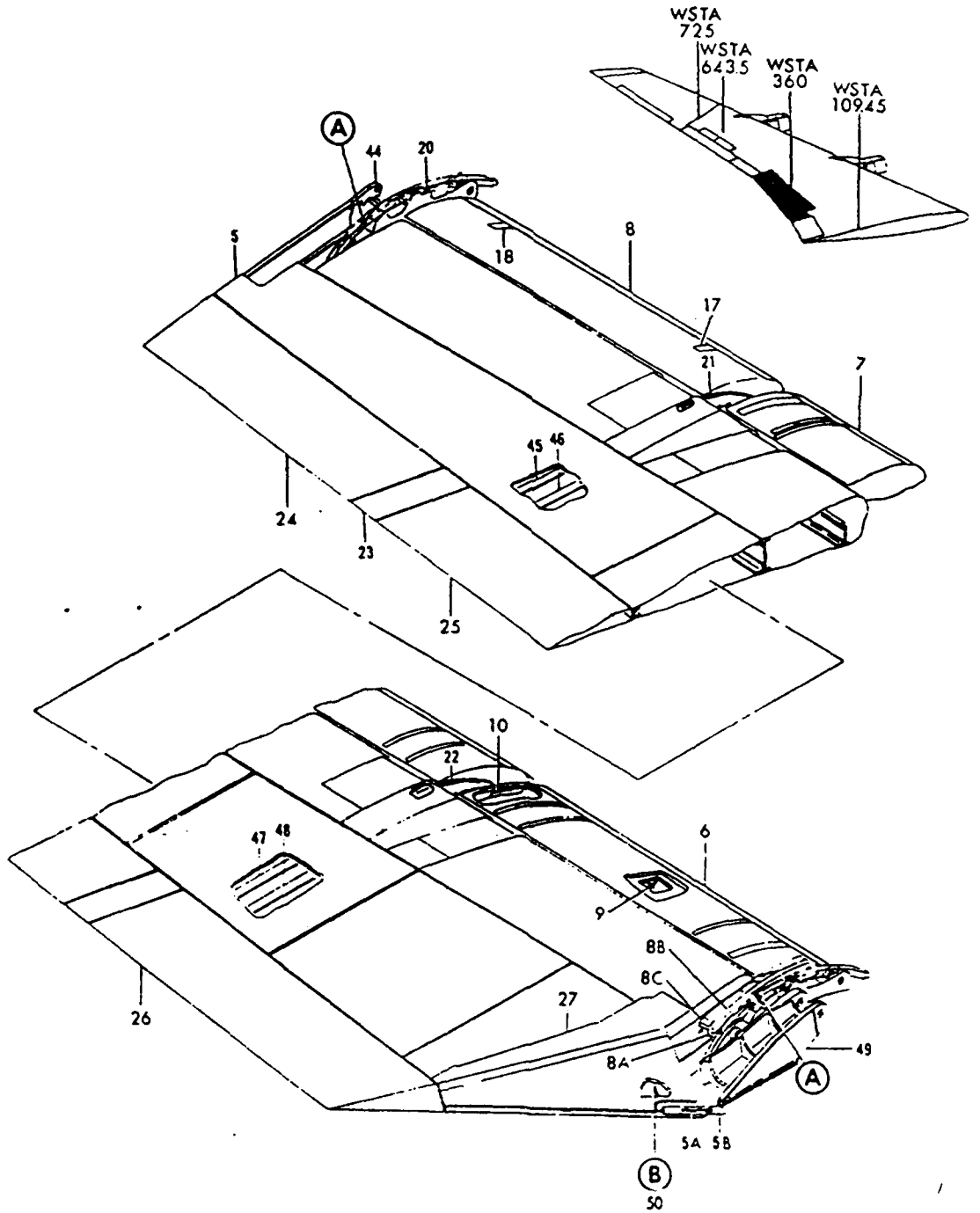


DETAIL II
TYPICAL SLOT RIB



DETAIL III
INERTIA DAMPER

Figure 2-27. Wing Inboard Flap Structure Identification and Repair Index (Sheet 1 of 3)



SEE NOTE ON PARTS LIST PAGES
FIGURE 12. FLAP INSTL, INBOARD W.M.G (SHEET 1)

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-12

ORIGINATOR

SUBJECT: Fairing Installation STA 960 to 1020, Wing to Body

BACKGROUND DATA:

PART NUMBER: 65-22871-31

NSN:
DRAWING(S):

NAME: HFw Franz-Josef Deckers
ORGANIZATION: NAEWF E-3 Comp.
TELEPHONE: 01-49-2451-63-6215
DATE SUBMITTED: 16 NOV 1989

TO(S): 1E-3A-4-53-1
FIGURE: 53-02-7A
INDEX: 48
WORK UNIT CODE:

PROBLEM: Water is collecting in the wing to body fairing. Existing drain holes in the lower frame are too high, resulting in water level being 1/2" high before draining.

RECOMMENDED ACTION: Install drain holes in the lowest spot of both wing to body fairings.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

16 Nov 1989:

OC-ALC/MMKRA will investigate problem, prepare ECO, and coordinate TCTO with OC-ALC/MMKRTA to install drain hole(s) to correct problem.

OC-ALC/MMKRA will also investigate related water collection problem with the doppler velocity sensor cavity aft of the MLG wheel wells.

12 March 1990:

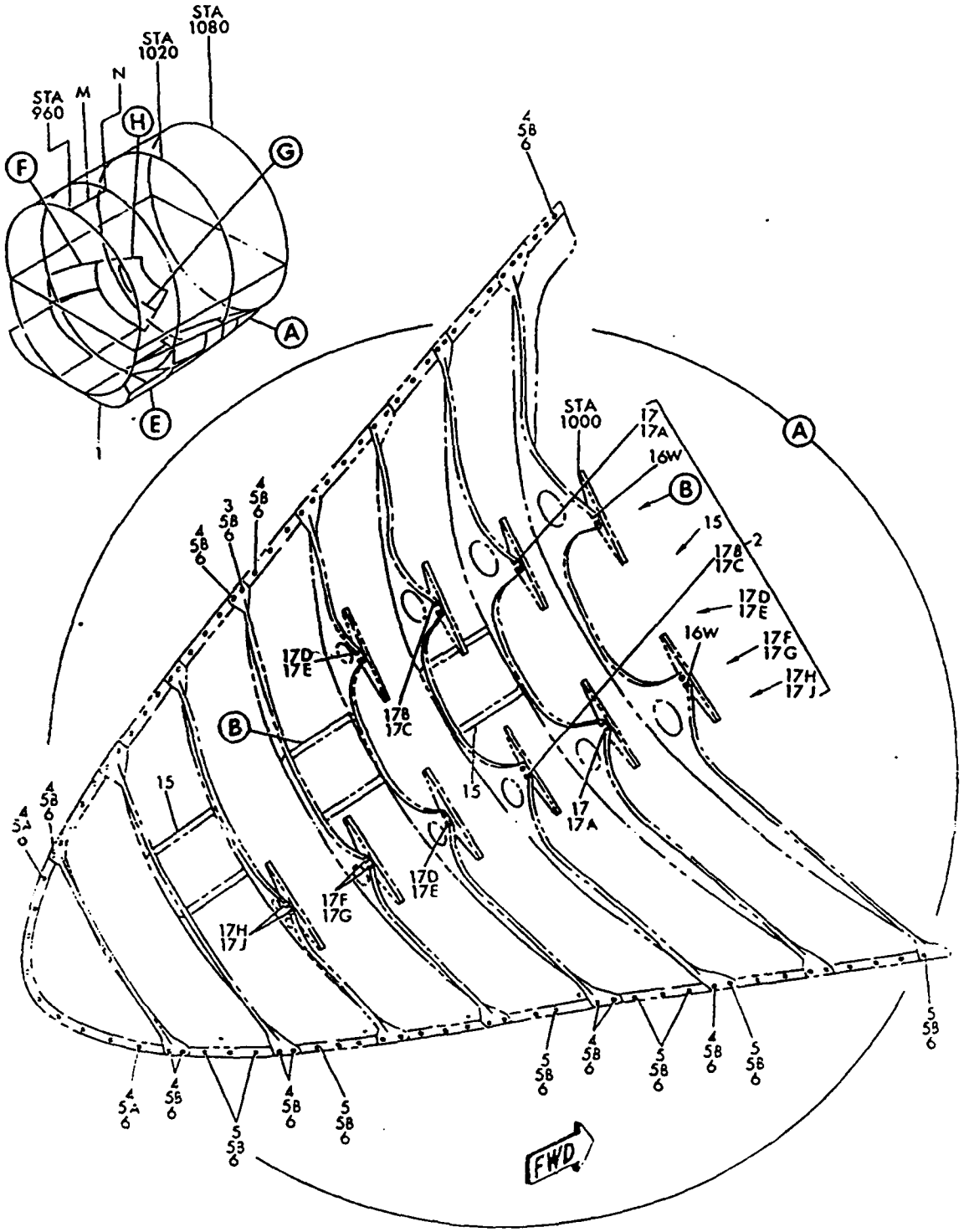
ECO's documenting additional drain holes have been submitted by MMKRA. OC-ALC/MMKRTA is preparing a TCTO to install the drain holes. Once installed, drainage should be sufficient to correct water retention problems in the fairings and the doppler velocity sensor cavity.

July 1990:

TCTO is being written by MMKRTA and will be finished by next CPAB. 552 AWACW/MAQ is setting up kitproofing.

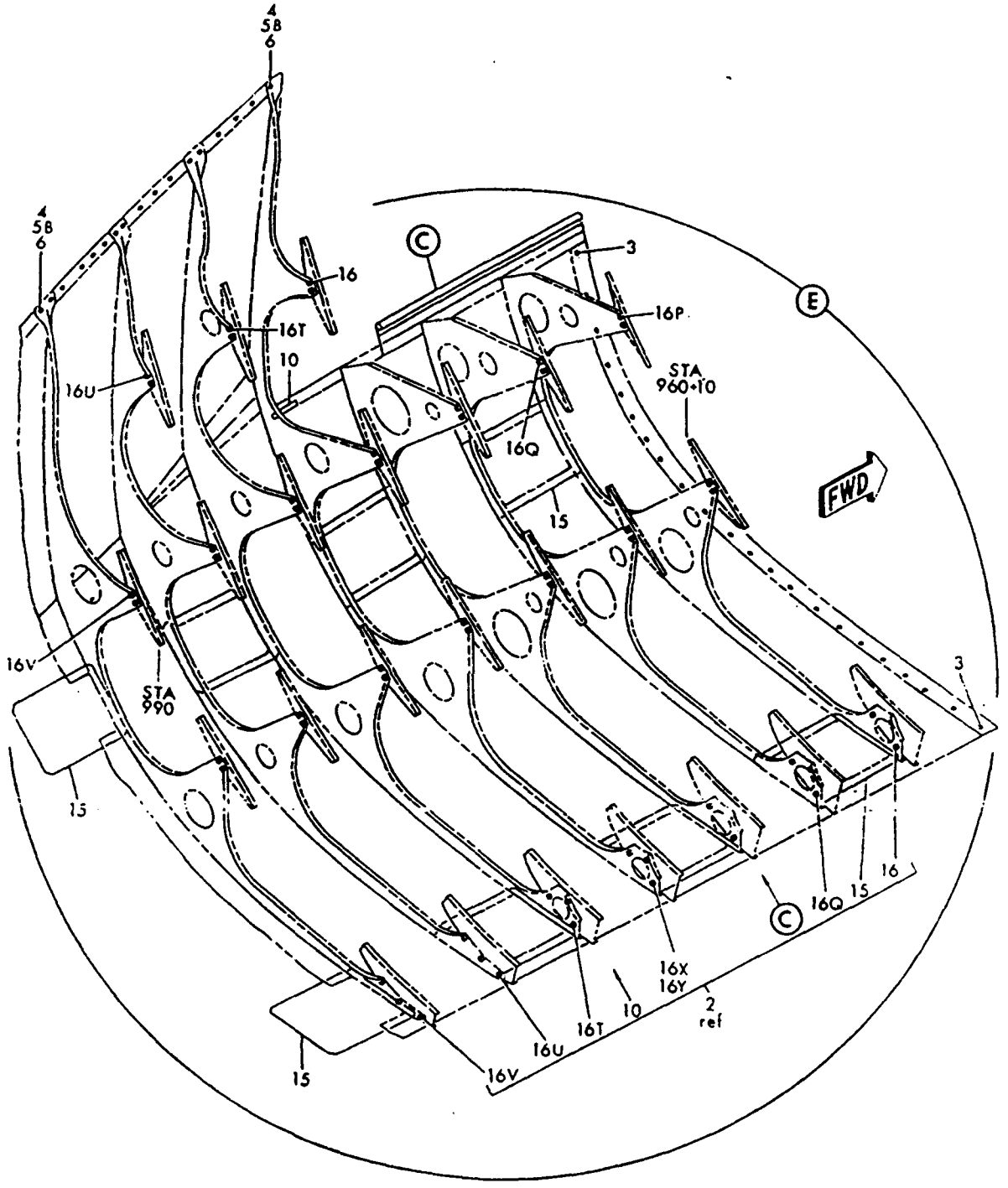
ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
OC-ALC/MMKRA	LT. Jim Kihle	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:



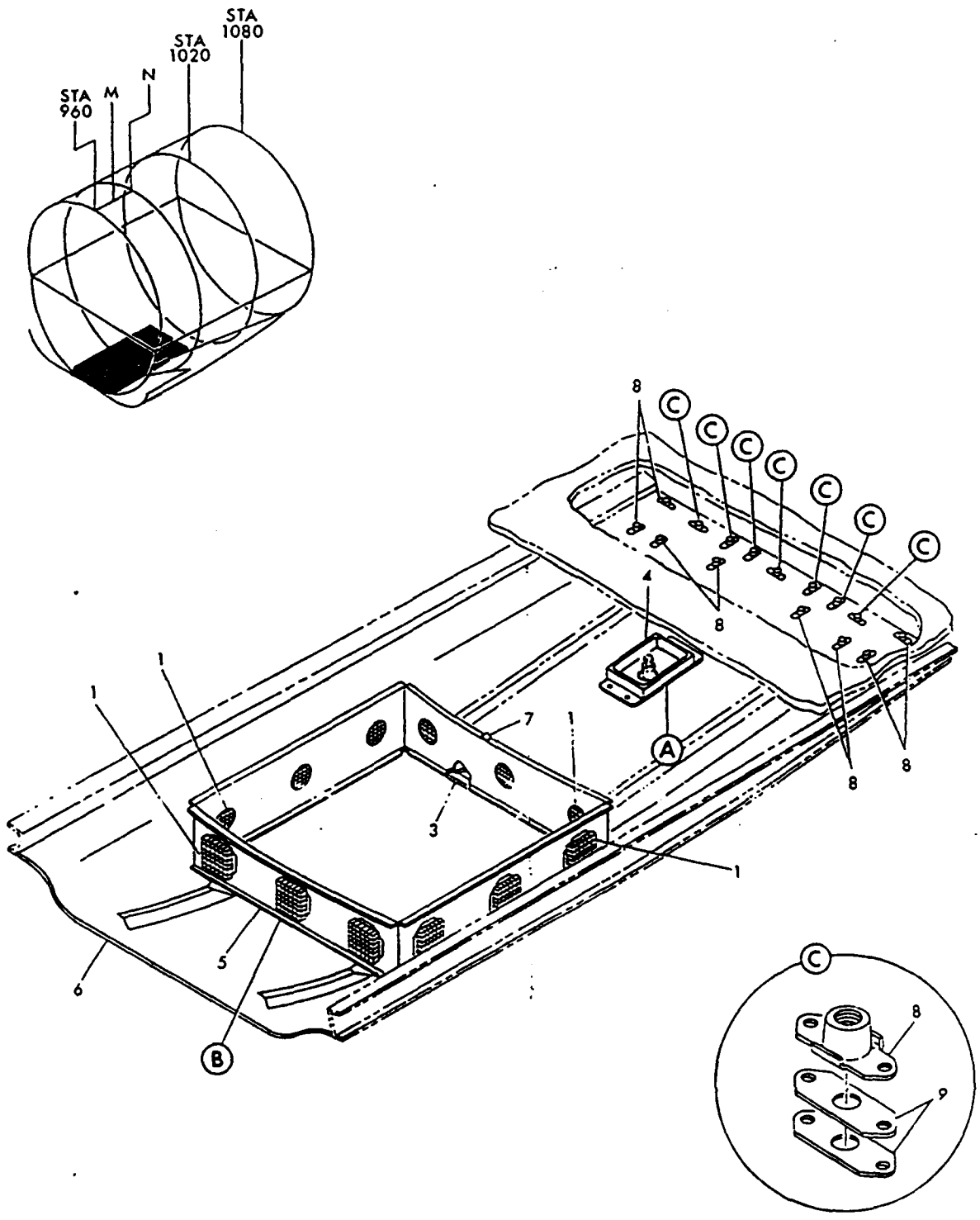
SEE NOTE ON PARTS LIST PAGES

FIGURE 17. FAIRING INSTL, STATION 960 TO 1080 WING TO BODY (SHEET 1)



SEE NOTE ON PARTS LIST PAGES

FIGURE 17. FAIRING INSTL STA 960 TO 1060 W.ING TO BODY (SHEET 3)



SEE NOTE ON PARTS LIST PAGES

FIGURE 10A. FAIRING INSTL, BOTTOM STATION 960 TO 1080 AND TO BODY (SHEET 1)

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-13

ORIGINATOR

SUBJECT: Wing Production Break STA 725

BACKGROUND DATA:

PART NUMBER:

NSN:

DRAWING(S):

NAME: HFw Franz-Josef Deckers
ORGANIZATION: NAEWF E-3 Comp.
TELEPHONE: 01-49-2451-63-6215
DATE SUBMITTED: 16 NOV 1989

TO(S):
FIGURE:
INDEX:
WORK UNIT CODE:

PROBLEM: Inspection is done every 2,500 flying hours to inspect rib chords and fasteners for corrosion and cracks at O/B upper wing splices. Inspection revealed 17 bolts, nuts, & washers corroded on A/C 79-0445.

RECOMMENDED ACTION: Add to special inspection requirements in T.O. 1E-3A-6, Page 2-A-009 lower wing splices. Incorporate inspection in ACI package.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

16 Nov 1989:

Because of the findings in the above inspection, the lower gap panels were removed and 2 nuts were found mildly corroded. On both wings in the middle of the lower production break, 8 nuts were found corroded and cannot be replaced.

NOTE: Wing Station 725 Production Break corrosion previously addressed as CPAB project log #86-04. Inspection/repair procedures in T.O. 1E-3A-23 revised. T.O. 1E-3A-6 inspection was changed from 2500 hour special inspection to a 1380 hour phase inspection.

MMKRA will investigate adding inspection to T.O. -6, and/or ACI/PDM as applicable. MMKRA will also investigate procedures for inspection/repair and change Tech Orders as is appropriate.

12 March 1990:

No actions have yet been taken by OC-ALC/MMKRA.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
OC-ALC/MMKRA	LT. Jim Kihle	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-13

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

12 March 1990 (continued):
NAEWF E-3A Component recommended decreasing the -6 inspection interval.
552 AWACW will investigate -6 inspection results and report their findings.

July 1990:
MMKRA will included inspection of the lower surface in T.O. -6 and FY91 ACI. MMKRA will take action to investigate the addition of of drain holes.

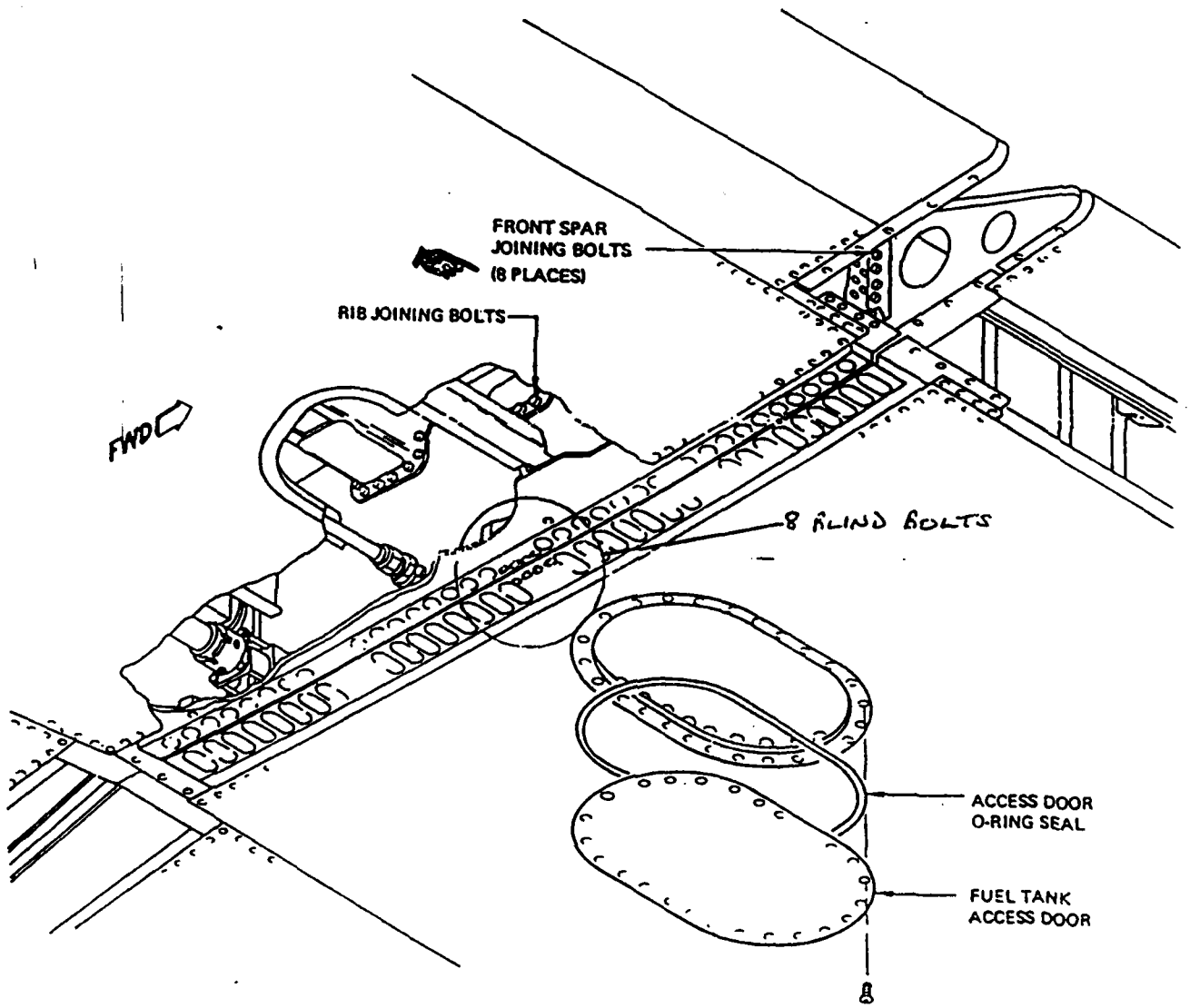


Figure 6-9. Outboard Wing [illegible]

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-14

ORIGINATOR

SUBJECT: Nose Landing Gear Trunnion and Bearing Assembly

BACKGROUND DATA:

PART NUMBER:

NSN:
DRAWING(S):

NAME: HFw Franz-Josef Deckers
ORGANIZATION: NAEWF E-3 Comp.
TELEPHONE: 01-49-2451-63-6215
DATE SUBMITTED: 16 NOV 1989

TO(S): 1E-3A-4-32-1
FIGURE: 32-03-23
INDEX: 18/19
WORK UNIT CODE:

PROBLEM: During lubrication of NLG trunnion, it was noted that no grease could be applied. After removal of lower NLG trunnion fitting caps and bearing halves, it was discovered that the grease channel of the lower bearing halves were clocked. Trunnions had slight surface corrosion.

RECOMMENDED ACTION: 1) Add to phase every 1380 hours to remove lower trunnion fitting caps and inspect bearing and trunnion, 2) Accomplish lubrication more frequently, and 3) Change grease from present MIL-C-21165 to MIL-G-23827 for all grease locations on landing gear.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

Nov 1989:
Based on findings, E-3A Component has initiated a one time inspection (OTI).

16 Nov 1989:
OC-ALC/MMKRA will investigate problem and make Tech Order changes as necessary.

12 March 1990:
A cost estimate of an EST is being developed by Boeing to investigate applying a dry film lubricant to the surfaces of the bearing. If this is feasible, existing grease holes will be plugged and frequent lubrication will no longer be required.

July 1990:
MMKRA will pursue testing locally before submitting an EST to Boeing.

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
OC-ALC/MMKRA	Jon Kimmel	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

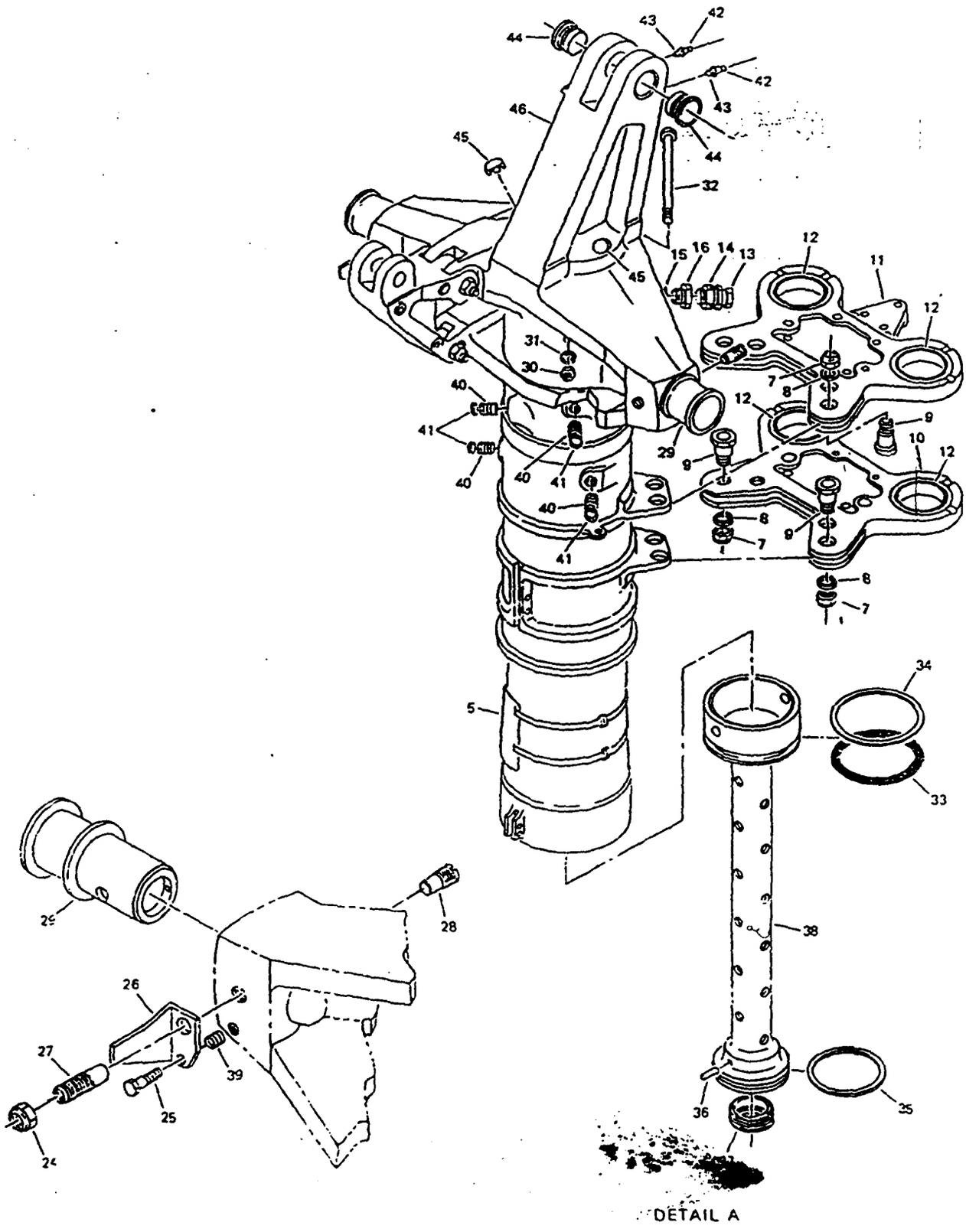


Figure 9–1. Nose Gear Oleo Assembly (Sheet 2 of 3)

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-15

ORIGINATOR

SUBJECT: Use of Conductive Sealant

BACKGROUND DATA: Developed by Georgia Institute of Technology for WR-ALC
PART NUMBER:
NSN:
DRAWING(S):
TO(S):
FIGURE:
INDEX:
WORK UNIT CODE:

NAME: Lt. Jim Kihle
ORGANIZATION: OC-ALC/MMKRA
TELEPHONE: (405) 736-3660
DATE SUBMITTED: 16 NOV 1989

PROBLEM: Many areas require a bonding path for EMP/EMI purposes, however, lack of any protective coating has resulted in extensive corrosion. The use of a conductive sealant will provide an excellent faying surface seal/fastener installation compound while maintaining a necessary conductive path.

RECOMMENDED ACTION: Investigate the use of conductive sealant and change T.O. 1E-3A-23 to call out the use of conductive sealant in areas that are corrosion prone and require a conductive path.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

16 Nov 1989:

OC-ALC/MMKRA will monitor and provide updates of conductive sealant testing. As appropriate, changes will be made to T.O. -23, and -3-1 to incorporate the use of conductive sealant in areas requiring conductive path due to HCI requirements.

OC-ALC/MMKRA will provide samples of conductive sealant to NAEWF E-3A Component and coordinate testing with Georgia Institute of Technology on a NATO E-3 aircraft with approval of NAEWFC/FCLE.

12 March 1990:

Aircraft -0351 had conductive sealant applied to door gates, rotodome EMP shield, and vertical fin closure panel. Aircraft will not be tested for conductivity degradation for 6 - 12 months, when MMKRA will report on results and further plans for use of conductive sealant.

MMKRA will investigate providing samples of sealant to NAEWF E-3A Component.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
OC-ALC/MMKRA	LT. Jim Kihle	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-15

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

July 1990:
MMKRA will inspect conductive sealant when aircraft -0351 returns.

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-16

ORIGINATOR

SUBJECT: LIXTON Corrosion Removal/Treatment Process

BACKGROUND DATA: Previously addressed as CPAB AI 87-42.
PART NUMBER:
NSN:
DRAWING(S):
TO(S):
FIGURE:
INDEX:
WORK UNIT CODE:

NAME: Lt. Jim Kihle
ORGANIZATION: OC-ALC/MMKRA
TELEPHONE: (405) 736-3660
DATE SUBMITTED: 16 NOV 1989

PROBLEM: An adequate method of corrosion removal/treatment for electronic components does not exist.

RECOMMENDED ACTION: Continue AI 87-42 investigation of LIXTON use, continue testing, and provide procedures to be published in T.O. 1E-3A-23.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:
Nov 1989:
Lixton information has not yet been included in T.O. 1E-3A-23. More information is being obtained prior to incorporation into Tech Order. A PRAM project is being initiated concerning the LIXTON process.

16 Nov 1989:
OC-ALC/MMKRA will coordinate procurement of equipment with 552 AWACW for testing of the LIXTON process.

12 March 1990:
552 AWACW informed OC-ALC/MMKRA of the decision not to pursue procurement of LIXTON at the O/I level. The 552nd would use this process if it were available at Tinker AFB, but they are not prepared to be become the depot for this process. The following factors were cited as reasons for not accepting at O/I level: 1) Cost of the initial setup, 2) Cost of environmental impacts (disposal costs, personnel safety requirements, etc.), 3) Space

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
MMKRA, E-3A Comp.	Lt. Jim Kihle/HFw FJ Deckers	

STATUS: CLOSED **DATE CLOSED:** JUNE 1990
FINAL DISPOSITION: Actions regarding Lixton process being pursued through other programs. It is unlikely that Lixton will be obtained at OC-ALC for use in the near future.

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-16

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

12 March 1990 (continued):

requirements. The bottom line - if OC-ALC buys the equipment and chemicals and sets up the equipment, the 552nd would use the process as needed, even paying to use it if necessary.

OC-ALC/MMKRA is still pursuing funding through PRAM, and has been notified from HQ AFLC/LEYM that funding may also be available from ASD. MMKRA will continue investigating obtaining the equipment at the E-3 depot facility or as an OC-ALC asset.

July 1990:

Richard Elmslie, Boeing, commented that he was impressed with LIXTON at the MOB.

WR-ALC/MMEM agreed that the LIXTON process is worthwhile process, regardless of the individual component similarities to MIL SPEC chemicals. The most logical place for LIXTON process is at WR-ALC, since electronic components are overhauled/processed/managed at that ALC. However, WR-ALC does not seem to want to make an effort to obtain the equipment/chemicals. WR-ALC/MMEM stated that any use of the LIXTON process be site specific and approved for use by system manager/environmental management.

Review at OC-ALC bioenvironmental personnel is still being done, as well as investigating funding sources and space for equipment. LIXTON is being submitted as a Value Engineering project.

No further CPAB actions can be taken on this subject. Project will be pursued further, but not tracked by CPAB. Recommened this Action Item be closed.

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-18

ORIGINATOR

SUBJECT: Review of -6, -23, ACI/PDM Work Specs

BACKGROUND DATA:

PART NUMBER:

NSN:

DRAWING(S):

NAME: Vince Foster
ORGANIZATION: OC-ALC/MMKRA
TELEPHONE: (405) 736-3660
DATE SUBMITTED: 16 NOV 1989

TO(S):
FIGURE:
INDEX:
WORK UNIT CODE:

PROBLEM: Review of draft FY92 USAF ACI/PDM Work Spec (WS), and paint Statement's-of-Work revealed ambiguities and a lack of adequate data/procedures. Either work specified in the -6 or ACI/PDM WS was not specific enough or corrosion inspection guidelines did not exist in the the -23.

RECOMMENDED ACTION: Revise ACI/PDM WS to be more specific and detailed, review -6 to specifically refer to -23 when requiring corrosion related inspections, and revise -23 to include virtually every area of the E-3 for inspection guidelines, particularly those areas called out in ACI/PDM WS and -6.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

16 Nov 1989:

All Users will review T.O. -6, -23, ACI/PDM Work Specs, and any other pertinent requirements to ensure adequate corrosion inspection/rework procedures are in place and available in T.O. -23 or T.O. 1-1-691.

12 March 1990:

OC-ALC/MMKRA will review T.O. 1E-3A-23 for requirement of CPC application, particularly relating to Section 9. Several areas must be included - rotodome hardback interior and engine nacelle, for example. New guidelines have been received by OC-ALC/MMKRA regarding corrosion inspections/CPC application on aging 707 commercial aircraft. OC-ALC/MMKRA will review the recommended inspections/CPC application procedures and modify existing Tech Data as necessary.

ACI/PDM work specifications are being reviewed and changed to require more cleaning, more access, and more application of CPC's.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
OC-ALC/MMKRA	Vince Foster	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-18

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

July 1990:
OC-ALC/MMKRA will continue revision of T.O.-23, -6, and ACI/PDM.
NAEWF E-3A Comp. is awaiting for a NATO unique T.O. -6.

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-19

ORIGINATOR

SUBJECT: Use of Wash Primer

BACKGROUND DATA:

PART NUMBER:

NSN:
DRAWING(S):

NAME: HFw Franz-Josef Deckers
ORGANIZATION: NAEWF E-3 Comp.
TELEPHONE: 01-49-2451-63-6215
DATE SUBMITTED: 16 NOV 1989

TO(S):
FIGURE:
INDEX:
WORK UNIT CODE:

PROBLEM: Paint is peeling off of almost all NATO aircraft being repainted.

RECOMMENDED ACTION: Investigate the use of wash primer in lieu of conversion coating, and test KOROFLEX primer to determine if paint peeling problems are primer related or not.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

16 Nov 1989:

NAEWF E-3A Component will provide a sample of filliform resistant wash primer proposed for use to WRDC/MLSA for testing. OC-ALC/MMKRA will coordinate testing with WRDC/MLSA and OC-ALC/MMEOM.

NAEWF E-3A Component will provide a sample of KOROFLEX primer used on NATO E-3 aircraft to WRDC/MLSA for testing. Primer used on NATO aircraft is from DeSoto Inc. distributor in England, whereas primer on U.S. aircraft is supplied directly from DeSoto Inc. Comparative testing of the two to determine differences may be necessary. OC-ALC/MMKRA will coordinate testing with WRDC/MLSA and OC-ALC/MMEOM.

12 March 1990:

All samples have been received by WRDC/MLSA at Wright Patterson AFB. No results of testing have been received yet.

(continued)

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
OC-ALC/MMKRA	Vince Foster	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 89-19

CONTINUATION SHEET

RECOMMENDED ACTION:

STATUS:

July 1990:

Robin Lee Stearns, OC-ALC/MAQCP, questioned whether the Koroflex primer used was from the batch that they rejected.

MMKRA will investigate the thermal requirement for AKZO Sikkens. Results will be available at the next CPAB meeting.

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 90-01

ORIGINATOR

SUBJECT: World Enzyme Super Cleaner No. 109

NAME: Lt. James Kihle
ORGANIZATION: OC-ALC/MMKRA
TELEPHONE: (405) 736-3343
DATE SUBMITTED: Mar 1990

BACKGROUND DATA:

PART NUMBER:

NSN:
DRAWING(S):

TO(S):
FIGURE:
INDEX:
WORK UNIT CODE:

PROBLEM: Environmental restrictions are limiting the use of various chemicals normally used in the prepaint surface preparation. New products/processes that are environmentally safe are needed.

RECOMMENDED ACTION: Investigate enzyme cleaners as a viable alternative to Methyl Ethyl Ketone (MEK) and/or Alodine conversion coating.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:

12 March 1990:

OC-ALC/MMKRA was provided information from SA-ALC/MMETM regarding enzyme based cleaners under SA-ALC study since 1982. Preliminary tests show that Enzyme Cleaner No. 109 (World Enzymes, Inc.) is superior to MEK when used for prepaint touchup surface cleaning. Other tests indicate it is an excellent product for replacing alodine conversion coating, however, it lacks the corrosion protection provided to the aluminum surface by the alodine.

July 1990:

Robin Lee Stearns, OC-ALC/MAQCP, commented that Enzyme Cleaner No. 109 is a good replacement for MEK.

Nona Larson, Boeing, added that although Enzyme Cleaner No. 109 is a good replacement for MEK there are some now that are even better.

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
OC-ALC/MMKRA	Lt. Jim Kihle	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION:

E-3	CORROSION PREVENTION ADVISORY BOARD	ACTION ITEM #: 90-02

ORIGINATOR

SUBJECT: Use of Taxi-way Rinse Facilities

BACKGROUND DATA:

PART NUMBER:

NSN:
DRAWING(S):

NAME: MSgt. Ray Albright
ORGANIZATION: 552 AWACW/MAQY
TELEPHONE: (405) 734-2683
DATE SUBMITTED: June 1990

TO(S):
FIGURE:
INDEX:
WORK UNIT CODE:

PROBLEM: Considerable time is spent rinsing the aircraft IAW Tech Order requirments.

RECOMMENDED ACTION: Recommend investigation of taxi-way rinse facilities ("bird bath") to eliminate general rinse requirements, and allow rinsing after each flight while taxiing in.

(USE CONTINUATION SHEET IF NECESSARY)

CPAB ACTION

STATUS:
June 1990:
OC-ALC/MMKRA will investigate the use of taxi-way rinse facilities and applicability for E-3 use.

ACTION OPR(S):	POINT(S) OF CONTACT:	EST. COMPLETION DATE:
OC-ALC/MMKRA	HOANG NGUYEN	

STATUS: OPEN **DATE CLOSED:**
FINAL DISPOSITION: